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THE

EDINBURGH

NEW DISPENSATORY.

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THE
EDINBURGH
NEW DISPENSATORY:

CONTAINING,

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| I.
The ELEMENTS of PHARMACEU-
TICAL CHEMISTRY. | III.
The PHARMACEUTICAL PREPA-
RATIONS and MEDICINAL COM-
POSITIONS of the latest Editions of
the LONDON and EDINBURGH Phar-
macopœias. |
| II.
The MATERIA MEDICA; or, An
Account of the different Substances
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Being an IMPROVEMENT of the
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THE FIFTH EDITION;

With many ALTERATIONS, CORRECTIONS, and ADDITIONS:
And a full and clear ACCOUNT of the NEW CHEMICAL DOC-
TRINES published by MR. LAVOISIER.

Edinburgh:

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TO

JOSEPH BLACK, M.D.

PROFESSOR OF CHEMISTRY IN THE UNIVERSITY OF EDINBURGH;
FIRST PHYSICIAN TO HIS MAJESTY FOR SCOTLAND;

MEMBER OF SEVERAL OF THE PHILOSOPHICAL AND LITERARY SOCIETIES
IN EUROPE, &c. &c.

SIR,

THAT the Edinburgh New Dispensatory meets with your approbation is evinced by the public recommendation which you are pleased to give it in your lectures in this Univerſity. This circumſtance alone might ſeem a ſufficient reaſon for dedicating a New Edition of it to you, independantly of the following conſideration.

The principal improvements which Pharmacy has received within theſe laſt thirty years, made their firſt appearance in the ſeveral editions of the Edinburgh Pharmacopœia, which have been publiſhed within that period; and, in adopting many of theſe improvements, the College of Phyſicians of Edinburgh were moſtly decided by your opinion, as being the perſon in whoſe Chemical knowledge and accuracy they chiefly confided.

But there are ſtill other reaſons for putting this Edition of the Diſpenſatory under your patronage. The proceſſes of Pharmacy are explained in it on the principles and doctrines delivered in your lectures; and every endeavour has been made to render it as uſeful as poſſible to the gentlemen attending them.

I have the honour to be,

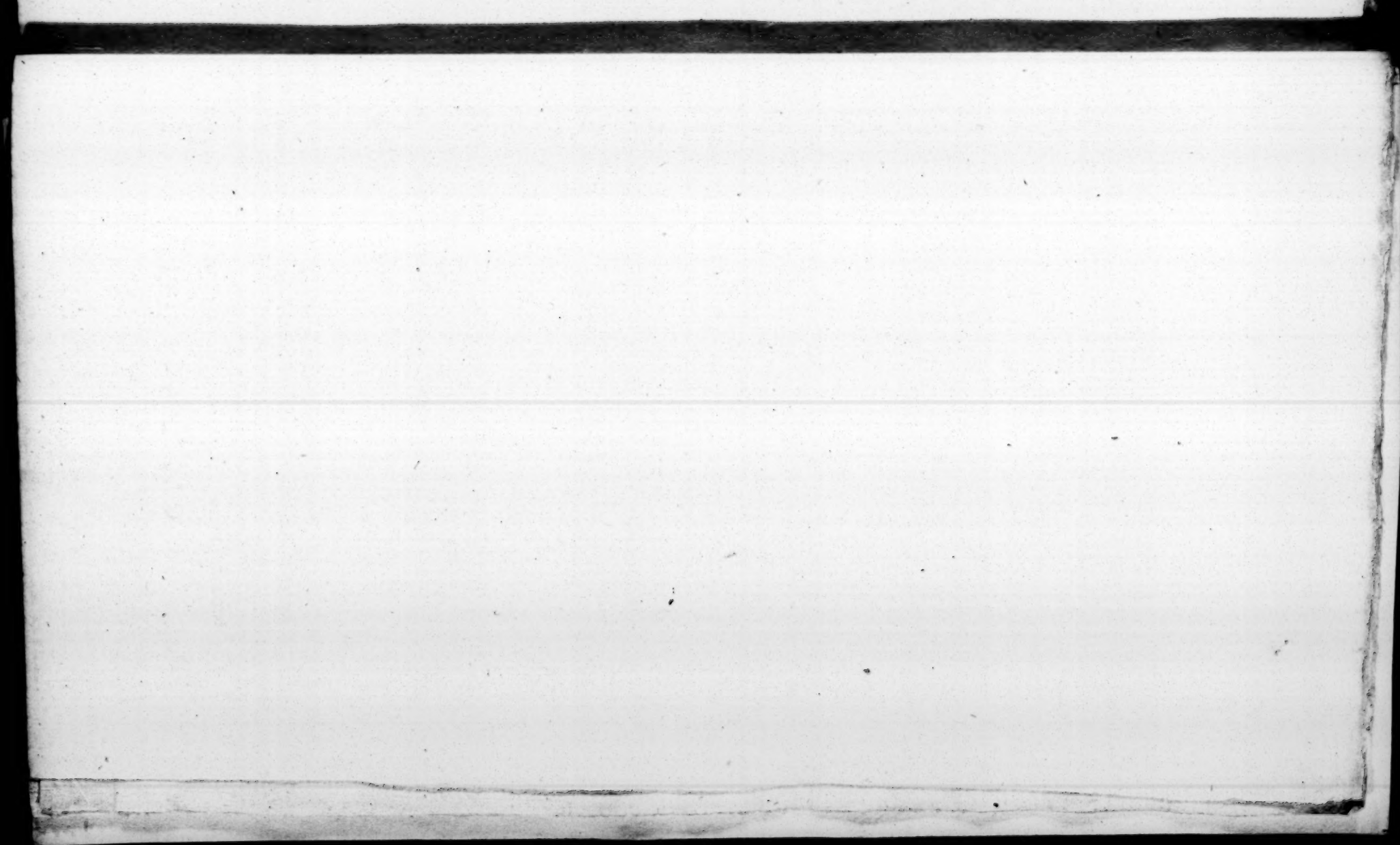
Sir,

Your moſt obedient,

Humble Servant,

EDINBURGH. }
June 1^{ſt}. 1794. }

JOHN ROTHERAM.



P R E F A C E.

THE New Dispensatory, originally published by DR. LEWIS, by its great superiority over every work of a similar nature, soon attracted the attention of the public, and obtained very high reputation both at home and abroad.

It was divided into four parts; the first of which contained the Elements of Pharmacy, or what is called Pharmaceutical Chemistry. The general neglect of this interesting and useful study, which former Authors of Dispensatories had shewn, induced DR. LEWIS to improve this part with singular care and precision. He gave a concise and systematic, yet comprehensive view of the general properties and relations of the vegetable, animal, and mineral substances employed in medicine; he enumerated the medicinal principles they contain, and shewed the several means by which these native principles might be extracted and separated, without making any alteration in their qualities; and at the same time, noticed the different forms and powers which they assume, from different natural or artificial operations, or from the mixture or coalition of one with another, avoiding every where all hypothetical reasonings, and delivering only the direct
result

result of experiment and observation. A practical account of the instruments and operations of the art of Pharmacy was judiciously added to the foregoing remarks, which gave the reader a full idea of them, without the tediousness of minute details.

The second part contained the *Materia Medica*, or an account of the Medical Simples; which, for reasons assigned in the introduction, were arranged in alphabetical order. In treating of the several Simples, he gave, where it was necessary, a short description of the Simple, with the marks of its genuineness and goodness; and pointed out the distinguishing characters of such as, from resemblance in external appearance, are liable to be confounded with others of different qualities. With regard to their virtues, particular care was taken to reject fabulous ones, and to give only those, which had either been confirmed by repeated experience, or may be rationally inferred from the sensible qualities of the subject, or from its agreement in smell, taste, &c. with others of known virtue. Many of the capital articles were examined pharmaceutically, and considerable pains were taken to ascertain in what separable part of the mixt its virtues reside, by what means the active principle is best extracted and preserved, and in what form the substance itself or its preparations may be most commodiously and advantageously exhibited.

The third and fourth part contained the preparations of the London and Edinburgh Pharmacopœias,

pœias, with some old ones which were still kept in the apothecaries shops, and were occasionally used; several of the more celebrated medicines that had come into esteem on the Continent; many used in the hospitals, and some elegant extemporaneous prescriptions that are frequently directed in practice.

Such was the work originally presented to the public by Dr. Lewis; and its reputation made so large a demand for it, that during the author's lifetime, many editions were printed, each succeeding one being improved according as new discoveries rendered improvements and additions necessary. Since the death of the ingenious and industrious author, Chemistry in all its branches has received many and important improvements; and these improvements have been successively applied to the several editions of Lewis's Dispensatory, that have been published by other editors.

The book which we now publish, is strictly speaking no other than a new edition of Dr. Lewis's original; although in consequence of the improved state of Pharmacy, and the change in Medical practice, it has received so many alterations and additions, as to be in some measure a new work. The original plan is the same; only that in this, the third and fourth parts are comprised in one, comprehending all the preparations and compositions contained in the last editions of the London and Edinburgh Pharmacopœias, together with many from some of the best modern foreign ones, and a few

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that have been recommended by authors of reputation, although they have no place in any public Pharmacopœia.

The alterations are not numerous, although they are material, especially in those parts of the work where the author explained the processes, according to the theory of the existence of a principle of inflammability or phlogiston.

The reader will find many articles altogether rejected from this edition, especially the history of such articles of the *Materia Medica*, as are now become obsolete, and which are not sanctioned by the authority of any of the modern Pharmacopœias; and of many of the old Galenical medicines, as they were called, which modern practice now totally rejects; some few of these last have, however, been retained with a view to shew the absurdity of Pharmaceutical composition in the two preceding centuries, and even in the beginning of the present.

The additions are very considerable, and are chiefly; an account of the New Chemical doctrines as delivered by MR. LAVOISIER; enlarged tables of the Elective Attractions both single and double; descriptions of Portable Furnaces, and some other Pharmaceutical instruments; the history of several articles of the *Materia Medica*; and a number of new preparations.

EDINBURGH, }
June, 1794.

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Explanation

*Explanation of the Contractions used for the titles of
different Pharmacopœias quoted in this Work.*

Lond.—Pharmacopœia collegii regalis medicorum Londinensis, 4to.
Londini, 1788.

Edin.—Pharmacopœia collegii regii medicorum Edinburgensis, 8vo.
Edinburgi, 1792.

Gen.—Pharmacopœia Genevensis, ad usum nosocomiorum, 8vo.
Genevæ, 1780.

Suec.—Pharmacopœia Suecica, editio altera emendata, 8vo. Hol-
miæ, 1779.

Ross.—Pharmacopœia Rossica, 4to. Petropoli, 1778.

Brun.—Dispensatorium pharmaceuticum Brunsvicense, 4to. Brunf-
vici, 1777.

Dan.—Pharmacopœia Danica, regia auctoritate, a collegio medico
Hauniensi conscripta, 4to. Hauniæ, 1772.

INTRODUCTION.

PHARMACY is the art of preparing, preserving, and compounding substances for the purposes of medicine. This art has been commonly divided into two branches, *Galenical* and *Chemical* pharmacy. But for this division there is no foundation in nature: And accordingly, processes in one pharmacopœia, referred to the head of Chemical, are in another referred to the head of Galenical. There can be no doubt, that even the most simple pharmaceutical preparations are to a certain extent chemical. Hence this division, founded on prejudice, and supported merely by a veneration for antiquity, is now banished from almost every modern pharmacopœia.

PHARMACY has also been divided into *Theoretical* and *Practical*; the first, consisting not merely of speculative opinions, but of a knowledge of facts and principles, tending to explain the *rationale* of processes; the latter, comprehending the mere manual labour employed in processes.

THE

THE former of these may therefore be justly styled Scientific Pharmacy. And there can be no doubt that an acquaintance with it is essentially necessary to the due exercise of the healing art: For without it the practitioner must often err in the forms of preparations and compositions which he employs; and he must often be deceived in the effects resulting from compositions, when he infers their properties from the known powers of the ingredients in their separate state. It would therefore be highly improper to detach the scientific and practical parts of pharmacy from each other. And accordingly, in the first part of this work, a general view is given of the elements of pharmacy, both scientific and practical, that the reader may be better prepared for the consideration of the particular processes which are treated of in the second and third parts.

As the new chemical doctrines lately published in France by Mr Lavoisier will in all probability be generally received in Europe, it has been thought the subjoined account of them would be acceptable to the pharmaceutical reader.

ABSTRACT

ABSTRACT

OF THE

NEW CHEMICAL DOCTRINES.

AS the new chemical doctrines, under the name of the Antiphlogistic theory, have acquired great celebrity, and have altogether overturned the theory of phlogiston, so long followed by chemical philosophers, it is presumed that a general view of the principles of the new doctrine will not be unacceptable to most readers; and that an explanation of these principles might with propriety form part of the introduction to a system of an art which depends solely on the science of Chemistry.

A general account of the new Chemical philosophy cannot be more properly conveyed, than by giving an abstract of the Elements of Chemistry, lately published by MR. LAVOISIER, which is the only connected system of the new doctrine. The system is in a great measure his own: it owes its
form

form and consistency entirely to his investigation and accurate observations; and is in a very considerable degree founded on his own discoveries. Although their superiority has occasioned these new doctrines to be quickly spread over Europe, yet their rapid progress in Britain has been farther assisted by that excellent translation of them into our language by Mr. KERR; who, from his thorough knowledge of the subject has done every justice, that was in the power of a translator to do, to Mr Lavoisier's book.

THE principal difference between Mr Lavoisier's chemical philosophy, and the STAHLIAN theory, consists in his having totally rejected the hypothetical element phlogiston, as unfounded, and even contradictory to fact and observation; while all the phenomena, usually denominated phlogistic, are clearly shewn to depend on the absorption, or extrication of vital air, or its solid base, called in the new nomenclature, *Oxygen*. It is extremely singular, but at the same time highly convenient, that nearly all the explanations of chemical phenomena given by the followers of the old theory, may be changed into the new doctrines, merely by abandoning the term phlogiston, and adopting the element of oxygen, with a slight inversion of the language. Whenever a body is by the Stahlians said to become phlogificated, or, in other words, combined with the imaginary element of phlogiston, Mr Lavoisier and his followers have clearly proved that oxygen, or basis of vital air, is extricated; and, on the contrary, that when a body was supposed to part with phlogiston, or be dephlo-

dephlogisticated, it had in reality absorbed, and become combined with vital air.

MR. LAVOISIER begins with explaining his ideas concerning the constitution of elastic æriform fluids or gasses, shewing, or at least giving strong arguments to prove, that they consist of a solid basis, combined with the matter of heat, called in the new nomenclature, *Caloric*. He founds his hypothesis on the observed general effects of increased temperature in bodies; but more especially that constant effect of their being augmented in their dimensions in every direction in consequence of an increased temperature. And he concludes from analogy, that all bodies are either *solid, fluid, or æriform*, according to the proportions which exist between the attractive forces inherent in their particles, and the repulsive power which caloric exerts to separate them. It follows from this theory, that all bodies are naturally solid, if heat, or caloric the cause of heat, were abstracted; and consequently, that all liquids and æriform fluids consist of a peculiar naturally solid basis, or a *principle proprium*, the particles of which are prevented from obeying the general law of attraction by their being combined with caloric, as a *principium commune*. By this hypothesis, and by the observed fact of the absorption of vital air, he explains the appearance of heat in combustion; shewing that vital air which he calls oxygen gas, being composed of a solid basis, viz. oxygen united with caloric, must necessarily deposit its caloric, when it quits the form of air to combine with a solid combustible body, or to change from

from a more rare to a more dense state of aggregation; and consequently, that these phenomena depend on the various elective attractions of caloric, as far as heat is concerned. That caloric when chemically combined with any body, alters the aggregation of that body to a more rare state, either from solid to liquid, or from liquid to æriform, according to the existing proportions; and that when set free from combination, it produces increase of temperature, accompanied with light, or fire, in proportion to its degree of concentration.

THERE are several simple elastic æriform fluids, which in all known temperatures, retain the state of gas, but which enter into combinations with other bodies, so as to assume the solid or liquid forms of aggregation. For the sake of precision he chuses to make a distinction between the solid basis which forms these combinations, and the gas in which they are combined with caloric. The chief of these gasses has long been called vital air; but Mr Lavoisier thinks it preferable to confine the term air to the atmospheric fluid, which is a mixture of several gasses, and to distinguish the individuals by adding to the generic term of gas, a specific name derived from some eminent property of the solid basis which forms its peculiar element. Thus he gives to vital air the name of *oxygen gas*, from the remarkable property of its base, which he calls oxygen, being the universal cause of acidity.

He has clearly proved that every instance of combustion is a case of the combination of this oxygen with the combustible body, and that in most cases this combination may take place in several degrees or limits of saturation. In general, when this saturation is complete, the compound body is an acid; and in the new language, the combustible body is said to be oxygenated. Thus most combustible bodies are acidifiable basis, or substances capable of being converted into acids by combination with oxygen. When the degree of the saturation of the combustible body falls short of what is necessary for the composition of an acid, the compound is named an oxyd. The process in the former case is called oxygenation, and the base is said to be oxygenated: in the latter case the base is said to be oxydated, and the act is styled oxydation. These terms are arbitrary; but, as they give clearness and precision to chemical language, without lengthened explanation, they are of great use.

THERE is only one known instance of a combustible body combining with oxygen, without forming an acid or an oxyd approaching to the acid state. Inflammable air, as it was formerly called, is a simple gas capable of uniting with oxygen by combustion: the two gasses deposit their caloric, which shows itself in fire, or heat and light; and the compound body resulting from their union is water. From this circumstance the solid base of the combustible gas has received the name of *hydrogen* in the new nomenclature;

menclature; and in its aëriform state, combined with caloric, it is called hydrogen gas.

ONE of the aëriform fluids, which composes the mixture called atmospheric air, is fatal to animal life, and extinguishes flame. It had formerly several names, according to the fancy of different philosphers; such as atmospheric mephitis, foul air, phlogisticated air, &c. In the new nomenclature it is called *azotic gas*, and its base, with its lethal quality, *azot*. This base unites in several different degrees of saturation with oxygen, forming either oxydes or acids according to the saturating proportions of oxygen in the compound. In the lowest degree of saturation with oxygen, the compound still retains the aëriform state, and does not dissolve in water: This, according to the general principles of the new nomenclature, ought to be called *azotic oxyd gas*; but its former name, *nitrous gas*, being very familiar, and involving no contradiction or ambiguity, is retained. By a farther saturation with oxygen, this nitrous gas is changed into the state of an acid, which retains the aëriform aggregation when alone; but is soluble, in considerable quantity, by water. For this acid the old name of nitrous gas is retained for the same reasons as were given for retaining nitrous gas; but the two long known states of this acid are distinguished by varying the termination of the specific name: The high-coloured, red, smoking acid, formerly called phlogisticated, is now called *nitrous acid*, and the pale, stronger acid, which does not emit red vapours, formerly called dephlogisticated nitrous acid.

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is now named *nitric acid*. The difference between these two states of the acid depends on different saturating quantities of oxygen, united with the same acidifiable base; the latter, or more perfect nitric acid, being fully saturated with oxygen, while in the former less perfect, and smoking nitrous acid, there is an over proportion of azot. These acids may be mutually converted into each other; the nitric into the nitrous, either by the addition of azot, or the abstraction of oxygen; and *vice versa*.

Azot and hydrogen, combined together, form caustic volatile alkali, or *ammonia*, as it is called in the new nomenclature. The reason of changing the name of this substance is to avoid unnecessary periphrasis in chemical language, and, as much as possible, to give each particular substance a clear and appropriated single term; the great advantages of which general principle of nomenclature will be seen by comparing the new names of the neutral salts with their old arbitrary denominations.

SEVERAL simple combustibile substances, during combustion, combine with oxygen, and form oxyds or acids in the same manner as azot. Sulphur, when burnt slowly, unites with an under-saturating quantity of oxygen to form a volatile, weak, and highly odorous acid, formerly called phlogificated vitriolic, or sulphureous acid, but now termed sulphurous acid. When burnt more rapidly, it absorbs a greater quantity of oxygen, and the resulting compound is a ponderous strong and inodorous acid, called

called sulphuric acid, formerly the vitriolic. These are likewise changeable into each other, either by adding oxygen to the sulphureous, or by taking it away from the sulphuric acid.

PHOSPHORUS is a simple combustible substance, which, like sulphur, combines with oxygen in two degrees of saturation; the less oxygenated combination being called the phosphoreous, and the more perfectly oxygenated state, the phosphoric acid.

CHARCOAL, or rather its elementary and simple combustible part, called *carbon*, or *char*, to distinguish it from the impure mixture called *charcoal*, unites, during combustion with oxygen to form carbonic or charic acid, formerly known by the names of fixed air, fixable air, aerial acid, &c.

THERE are several known acids which have not yet been decomposed, and their acidifiable bases consequently remain unknown. These are the *muriatic acid*, *boracic acid*, and *fluoric acid*; but from the general analogy, it may be fairly presumed that they consist of peculiar combustible bases, combined with oxygen as their general acidifying element. Though muriatic acid cannot, in our present state of chemical knowledge, be decomposed so as to discover its base, it can be made to unite with a considerable additional quantity of oxygen, and it thereby acquires properties very different from those it possessed in its ordinary state: In this new state it is called in the new nomenclature, *oxygenated muriatic*

atic acid. Super-oxygenated muriatic acid would perhaps be a better name for it.

Besides these simple acids, or acids with simple bases, many acids have compound bases, or two or more simple acidifiable bases united together, and these compound radicals are converted into acids, or are oxygenated by combination with oxygen. The compound acid, long known under the name of *Aqua regia*, is of this kind, and it is evident, from the elective attractions and other phenomena, that the nitric and muriatic acids which form it, are chemically combined together; that is, their acidifiable bases unite to form a compound radical, for the acidification of which the oxygen of both acids serves in common. The other acidifiable and oxydable compound bases are procured from vegetable and animal substances, and consist, in general, of various proportions of carbon and hydrogen united together, sometimes with the addition of azot, or phosphorus, or both. In the state of oxyds, these compound radicals have an addition of oxygen in a saturating degree not sufficient for the acid state: sugar, starch, gum, mucus, gluten, oil, resin, alcohol, ether, &c. are compound acidifiable bases, united only with the oxydating portion of the oxygen. The acids of this order are,

<i>New Names.</i>	<i>Old Names.</i>
Tartarous acid	Acid of tartar.
Malic acid	Unknown till lately.
Citric acid	Acid of lemons.
Pyro-lignous acid	Empyreumatic acid of wood.
Pyro-mucous acid	Empyr. acid of sugar.
Pyro-tartarous acid	Empyr. acid of tartar.
	d Oxalic

New Names.

Oxalic acid
 Acetous acid
 Acetic acid
 Succinic acid
 Benzoic acid
 Camphoric acid
 Gallic acid
 Lactic acid
 Saccholactic acid
 Formic acid
 Bombic acid
 Sebacic acid
 Lithic acid
 Pruffic acid

Old Names.

Acid of forrel.
 Vinegar, or acid of vinegar.
 Radical vinegar.
 Volatile salt of amber.
 Flowers of benzoin.
 Unknown till lately.
 { The astringent principle of vegetables.
 Acid of four whey.
 Unknown till lately.
 Acid of ants.
 Unknown till lately.
 Ditto.
 Urinary calculus.
 { Colouring matter of Prussian blue.

It is not pretended that these acids can be formed by combining the simple elements of their bases, and adding oxygen to the compound radical, so as to produce a synthetic proof of their nature and constitution ; but by means of destructive distillation in close vessels, and by other accurate modes of analysis, their various elements can be separated from each other, and their several proportions ascertained with tolerable precision.

THE metals from another set of oxydable or even acidifiable bases, and it is worthy of remark, that in the state of oxyds, they all agree with the general phenomena of alkaline bodies ; while many of them, by a farther addition of oxygen, are converted into acids. They are all combustible bodies, and most of them require an exceeding high degree of temperature to combine them with oxygen in the dry way ; but all of them may be combined with it in the moist way,

way, by taking advantage of the elective attractions. What was formerly called the reguline form of metals, is their most simple state, in which they are not combined with any known substance; while, on the contrary, the state of calx, in which they were formerly supposed to be pure elementary bodies, is that in which, by addition of a saturating portion of oxygen, less than is necessary for the acid state, they are converted into metallic oxyds, formerly denominat'd calces. Of this state of oxydation, there are, in most of the metals, several different degrees; and, in the new nomenclature, these different degrees of oxydation are distinguished by their colours, or by the peculiar circumstances in which the oxydation is produced.

It is absolutely necessary for the solution of a metal in an acid, that the metal be in the state of an oxyd, previously to the act of solution, or that it become oxydated during the process, either by decomposing a part of the acid used to dissolve it, or the water with which the acid is diluted. Thus it always happens, that, when metals not previously oxydated, are dissolved in the nitric acid, or in concentrated sulphuric acid, a part of the acid is decomposed; azot, or nitrous gas, or both, being discharged in consequence of part of the acidifying oxygen, being taken away from the base to oxydate the metal; or sulphurous acid, or even sulphur is evolved, from a similar decomposition of the perfect sulphuric acid, when that is employed for the solution. When diluted sulphuric acid is employed, the water of dilution

lution is decomposed to oxydate the metal, in consequence of the elements of the acid being held together by a stronger elective attraction, than that which is exerted between the constituent ingredients of water; the consequence is, that, in this case, hydrogen gas becomes disengaged, and the metal, while it is dissolving in the acid, is oxydated by a part of the oxygen of the water.

THE above is in a great measure the whole of the new chemical doctrines; what remains is little more than a change of nomenclature, for the purpose of convenience and precision, and to avoid ambiguity, or what appear to the author to be false views of phenomena and chemical facts.

THE names of the metals are all made to terminate in Latin, in the neuter gender; and one word is used for denoting each in its most perfect state of purity, as far as the present state of chemical knowledge permits. Thus Platinum, Aurum, Argentum, &c. denote the perfect metallic, or reguline state of Platina, Gold, Silver, &c.

THE alkalies and earths are named as follow :

New Names.

Potash
Soda
Ammonia
Lime
Magnesia
Barytes
Clay or argil
Siliceous earth

Old Names.

Pure, or caustic, fixed vegetable alkali.

Soda

Ammonia

Lime

Magnesia

Barytes

Clay or argil

Siliceous earth

THE

THE combinations of alkalis, earths, and metallic oxyds with acids, forming what are called neutral, middle, earthy, and metallic salts, are divided into genera according to the acid which forms part of their constitution; and the peculiar basis with which the acid is combined in each particular salt, forms the specific name of that compound. By this means the former unintelligible, or false names of these salts, are rejected, and terms are employed, which not only indicate the particular salt meant to be expressed, but also enumerate the ingredients, and even express the state of the ingredients which enter the composition. Thus all the salts which have the sulphuric acid, combined with an alkaline, earthy, or metallic base, are named *sulphats*; while those, having the sulphurous acid combined with the same bases, are named *sulphites*: and so of the other acids as in the following table.

<i>New Names.</i>	<i>Old Names.</i>
Sulphat of barytes	Heavy spar, Vitriol of heavy earth.
potash	{ Vitriolated tartar, Sal de duobus, Arcanum duplicatum.
soda	
lime	Glauber's salt.
magnesia	{ Selenite, gypsum, calcareous vitriol. Epsom salt, sedlitz salt, magnesian vitriol.
ammonia	
argil	Glauber's secret sal ammoniac.
zinc	Alum.
iron	{ White vitriol, goslar vitriol, white coperas, vitriol of zinc.
manganese	
cobalt	{ Green coperas, green vitriol, mar- tial vitriol, vitriol of iron.
nickel	
lead	Vitriol of manganese.
tin.	Vitriol of cobalt.
	Vitriol of nickel.
	Vitriol of lead.
	Vitriol of tin.

New

INTRODUCTION.

New Names.

Sulphat of copper.

bismuth

antimony

arsenic

mercury

silver

gold

platina

Old Names.

{ Blue copras, blue vitriol, Roman vitriol, vitriol of copper.

Vitriol of bismuth.

Vitriol of antimony.

Vitriol of arsenic.

Vitriol of mercury.

Vitriol of silver.

Vitriol of gold.

Vitriol of platina.

IN some cases these salts may be formed with a limited and permanent super-saturating proportion of acid, or with the contrary excess of the alkaline earthy or metallic base: in these two cases the particular state of saturation is denoted by prefixing the word acidulous or alkaline to the former names. Thus cream, or crystals of tartar, which is known to consist of potash, or the fixed vegetable alkali, united to an excess of the tartarous acid, is called acidulous tartarite of potash, and so of the rest.

THIS is as full an account of the doctrines and nomenclature of the new chemical philosophy, as the limits of this prefatory discourse would admit: For father particulars the reader must be referred to Mr. Lavoisier's Elements, where full and clear explanations are given of all the particular parts of the system; and where the chief objections, which have been made against it by the followers of the old theory, are obviated and answered.

It is certainly no small confirmation of the reasonableness, and superior evidence of this new chemical philosophy, that DR. BLACK, who has long taught chemistry

chemistry in this university, with the greatest and most deserved reputation, and who is himself a very considerable chemical discoverer, has acknowledged, that the theory of phlogiston, according to which all his reasonings have been regulated since he began to give lectures, is now become much embarrassed, in consequence of the numerous discoveries which have lately been made; and that it does not afford such clear and satisfactory explanations of the phenomena of chemistry as Mr. Lavoisier's theory, which is more simple and easily comprehensible, and more closely connected with the new chemical facts.

MR. KIRWAN also, who has long been a strenuous defender of the Stahlian doctrine, and has even published a treatise in its support against Mr. Lavoisier's opinions, has, with more ingenuousness than falls to the lot of most men, candidly and openly acknowledged his error, and now subscribes to the truth of those very opinions he so lately publicly opposed.

DIRECTIONS FOR PLACING THE PLATES.

- Plate I. No. 1. 2. not cut separate, to be placed between page
48 & 49.
II. to fold facing page 52.
III. No. 1. 2. not cut separate, to be placed between
page 56 and 57.



THE EDINBURGH

NEW DISPENSATORY.

PART I.

ELEMENTS OF PHARMACY.

CHAPTER I.

A general View of the Properties and Relations of Medicinal Substances.

SECT. I.

VEGETABLES.

VEGETABLES are organized bodies, furnished with a variety of vessels for the reception, transmission, and perspiration of different fluids. Analogous to animals, they are produced from seeds or eggs, and are endowed with functions, by which the aliment they imbibe is changed into new forms, into solids and fluids, peculiar to particular plants, and to different parts of the same plant.

The analogy between the vegetable and animal kingdoms will appear still more striking, when we consider that vegetables exhibit, though in a less degree, all the phenomena of sensibility and motion.

The *pabulum* of vegetables, like that of most animals, is of a mixed nature; and is composed of the necessary union of water, heat, light, and different kinds of airs.

From varieties in the state and proportion of these several principles a very multiplied diversity takes place in the external form, quantity, and quality of one and the same vegetable: hence the difference of plants from the soil, climate, season, and other similar circumstances. The influence of heat, and light, is perhaps the most important article in the aliment of vegetables. It is of importance however to remark, that the soundness and specific principles of vegetables are not invariably the more complete in proportion to the vigour of their growth; high health, which is always a dangerous state in the constitution of animals

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is often the means of perverting or destroying the œconomy of vegetable life. Thus the finer aromatics, which naturally inhabit dry and sandy soils, when transplanted into a moist and rich one, grow with rapidity and vigour, and have their bulk considerably increased; but lose their fragrance, as if their active principles were exhausted by the luxuriance of their growth.

Plants are also found to differ considerably in the different periods of their growth. Thus, some herbs in their infancy abound most with odiferous matter; others again yield little or none till they have attained to a more advanced age. Many fruits, in their immature state, contain an austere acid juice, which by maturation is changed into a sweet one: others, as the orange, are first warm and aromatic, and afterwards by degrees become filled with a strong acid. The common grain, and sundry other seeds, when beginning to vegetate, are remarkably sweet: yet the kernels of certain fruits prove, at the same period, extremely acid. The roots of some of our indigenous plants, whose juice is, during the summer, thin and watery, if wounded early in the spring, yield rich balsamic juices, which, exposed to a gentle warmth, soon concrete into solid gummy resins, superior to many of those brought from abroad. In open exposures, dry soils, and fair warm seasons, aromatic plants become stronger and more fragrant, while those of an opposite nature become weaker. To these particulars therefore due regard ought to be had in collecting plants for medicinal uses.

It may be proper to observe also, that the different parts of one plant are often very different in quality from each other. Thus the bitter herb wormwood rises from an aromatic root; and the narcotic poppy-head includes seeds which have no narcotic power. These differences, though very obvious in the common culinary plants, do not seem to have been sufficiently observed or attended to, in those plants that have been admitted as articles of the *materia medica*.

Without any obvious dependence on the circumstances above mentioned, vegetables are, like animals, also obnoxious to diseases and death; which, whether occasioned by intense cold, by insects, lightning, or other causes, always maintain a striking analogy to the affections of animals. The principal difference between animals and vegetables is, that the several parts of vegetables do not constitute such a mutually depending system as those of the more perfect animals. Hence it is, that a very considerable part of a plant may be diseased or dead, while the rest enjoys life and perfect good health. Though the physiology of vegetables is hitherto insufficient for forming any complete doctrines of the causes and cure of their several diseases; yet, in many cases, it might be useful to attend to the formation of a pathology of the vegetable kingdom: in the state even of our present knowledge, it is of importance in the study of pharmacy to be aware that such diseases really exist, and are capable of changing or destroying the active principles of many of our most valuable herbs. In the plants more evidently sensitive, the diseases exhibit a very close analogy to many of those of animals: several of the remote causes are such as are known

known to obstruct perspiration, to induce general debility, or otherwise disorder the animal economy. The diseases also are evidently marked by a diminution of their sensitive and moving principle; and perhaps, in consequence of this diminution, their solids, their sap, and other fluids, shrivel and decay, and the whole plant assumes new forms, and is impregnated with inert, or fraught with noxious, principles. Analogous also to animals, the plant, when deprived of the living principle, runs into all those changes common to inanimate matter. We shall now proceed to examine the changes to which vegetables are subject.

I. *Productions from Vegetables by FERMENTATION.*

FERMENTATION is a spontaneous motion, excited in dead vegetables, peculiar to those organic substances.

The circumstances favouring fermentation are in general, a certain degree of fluidity, a certain degree of heat, and the contact of the air.

There are however several substances, of themselves not susceptible of fermentation, which nevertheless may be brought into that state by the admixture of those that are; as by adding to them, along with a proper quantity of water, a portion of the yeast or head thrown up to the surface of fermenting liquors. Without this expedient many vegetables would run immediately into the acetous, and some of them into the putrefactive fermentations. It is also found, that though acetous and putrefactive ferments are unable to stop the vinous fermentation, they are however capable of assimilating the liquor to their own nature in a more perfect form; and hence it is, that in the manufactures of wine, rum, and vinegar, it is found useful to keep the vessels well seasoned with the liquor intended to be prepared. Three different kinds or stages of fermentation have been generally distinguished by chemists. The vinous, which furnishes alcohol, or what is commonly called spirit; the acetous, which affords vinegar; and the putrefactive, which yields volatile alkali. Being generally constant in succession to each other, the whole process will be best understood by considering each of them apart. All vegetable substances are not capable of the vinous fermentation: the conditions necessary to its production are, a saccharo-mucilaginous matter; a fluidity somewhat viscous, a heat from 40 to 96 of Fahrenheit's thermometer; a considerable mass of matter; and the access of the external air.

The phenomena exhibited in the vinous fermentation are, a brisk tumultuary motion, the liquor loses its transparency and homogeneous appearance, its bulk and heat are considerably increased, the solid parts are buoyed up to the top, and a great quantity of a permanently elastic fluid is disengaged. This fluid or gas being heavier than atmospheric air, floats near the surface of the liquor; and is easily distinguishable from common air, by extinguishing flame and animal life, precipitating lime from limewater, crystallising and rendering mild the caustic alkali: it is the gas sylvestre of Helmont, and the fixed air, aerial acid or carbonic acid of modern chemists. After some time the tumultuary motion in the liquor is suddenly checked, perhaps from the generation of the alcohol;

hol ; a fine lee is also precipitated ; and the floating matter, if not purposely prevented, subsides to the bottom of the vessel. In the wines produced from the grape, a large quantity of a saline concrete is incruited on the sides and bottom of the casks ; and this is commonly known by the name of tartar. the properties of which we shall afterwards examine. At the termination of these phenomena, the vegetable matter has assumed new properties ; and from being a mild, sweet, or gently acidulous infusion, is now become the brisk, pungent, and inebriating liquor, called Wine or Vinous Liquor.

Fermented or vinous liquors are prepared from a great variety of substances : the saccharine substances, or those rendered so by a beginning vegetation, are in general fittest for the purpose ; a multitude of collateral circumstances are also necessary for the proper management of the process ; and in vinous liquors, great diversities are observable. These differences are not only observable in wines produced from different substances, but also in those produced from one and the same vegetable. These diversities may be referred to the different conditions of the substance to be fermented, to the states of fluidity and heat, and to the degree of fermentation to which the subject has been carried. This last is principally modified by the preceding causes, and frequently by very minute and apparently trifling circumstances in the conduct of the operation. Hence the numerous varieties in the vinous liquors produced from the grape, which have been more peculiarly denominated *wines*. It is an important part of pharmacy to enquire into these differences with care and attention.

The diversity in vinous liquor is still more obvious in those produced from different vegetables. Many of the native qualities of the substances, as colour, taste, flavour, &c. often remain in the wine ; not being totally subdued by that degree of fermentation necessary for rendering the liquor vinous. Hence the remarkable difference of wines produced from the grape, and the graminous feeds : the wine produced from these last has been more strictly called *beer* ; and is well known to differ from wines produced from apples, pears, apricots, or any other fruit.

1. Of the Product of the Vinous Fermentation.

THE product of all these fermented vegetables is, as we have just now mentioned, the pungent and intoxicating liquor called wine. It is proper, however, in pharmacy, to enquire into the different principles which enter its composition. As the wine furnished by grapes is the most valuable and generally known, we shall take it as an example. Grape-wine, then, is composed of a large quantity of water, of alcohol, of tartar, and of a colouring matter. It is proper, however, that we should lay down the proofs of such a combination in wine, and explain the methods by which it may be decomposed and separated into the constituent parts above-mentioned.

For this purpose, recourse is generally had to the assistance of fire. The liquor is put into an alembic ; and, as soon as it boils, a white milky fluid, of a pungent smell and taste, distils into the recipient. This fluid is called *aquavita*, or, in common language, *spirit* ; it is compounded of water

water and certain matters capable of suspension in water, of alcohol, and of a small proportion of oil; which last communicates to it a milky colour: the yellow colour, which the spirit afterwards assumes, is partly owing to the same oil. and partly to a solution of the extractive matter of the casks in which it has been kept. This *aquavita*, like wine, always partakes more or less of the flavour of the vegetable from whence it has been prepared; but by farther distillation, and other processes, it is freed of its water, and of the native principles of the vegetable matter which the watery parts had kept in solution; when thus prepared, it is a pure *alcohol* or *inflammable spirit*, which is always the same from whatever vegetable the wine was produced.

After all the *aquavita* has been drawn off, the residuum now ceases to be wine; it is of a chocolate colour, of an acid and austere taste; it has now assumed a heterogeneous appearance, and a great quantity of saline crystals is observed in the liquor; these crystals are the *tartar*. By the above processes, then, we have fully decomposed *wine*: but it is to be observed, that by this analysis we have not separated the different parts of wine in their original and entire state; nor are we hitherto acquainted with any method of regenerating the wine by recombining the *aquavita* with the residuum: some product of the fermentation is, therefore, changed or destroyed. The residuum, when evaporated, assumes the form and consistence of an extract; the colouring part may be abstracted by rectified spirit of wine, but is not separable from it by the addition of water: it seems therefore to be of a gummi-resinous nature, and extracted from the grape by means of the alcohol generated during the fermentation.

From this analysis, it is obvious, that wine is composed of water, colouring matter, alcohol, and a something that is changed or lost. We shall refer the particular examination of alcohol and tartar to the proper places assigned them in this work; and we hope that from this general survey of the subject, the properties of wine, as a solvent of several medicinal substances to be afterwards examined, will be much more readily understood. Before we go farther, it is proper to add, that the *lee* precipitated from wine during fermentation, is a compound of the stones and pieces of grape, tartar, and vitriolated tartar: the two first are inert bodies; the two last we shall particularly examine in their proper order. We are now prepared to consider the nature and product of the next kind or stage of fermentation, viz.

2. ACETOUS Fermentation.

To understand the process of the acetous fermentation, we must leave for the present our analysis of the product of the vinous fermentation, and return to the wine in its most perfect and entire state. It is proper to observe, that though, after the liquor has become vinous, a partial cessation of the more obvious phenomena takes place, yet the wine still suffers a slow and imperceptible degree of fermentation. We must not consider the liquor as being in a quiescent state, but as constantly approaching to the next stage, viz. the *acetous fermentation*. This kind of insensible fermentation, or what we may call the intermediate change, seems to be necessary to the perfection of the wine. Its degree, however,

ever, is to be regulated under certain limitations: when too much checked, as by cold, thunder, or other causes, the wine becomes vapid; when too much encouraged by heat, contact of air, &c. it approaches too far to the acetous change: but in order that the vinous shall proceed fully to the acetous fermentation, several circumstances are required; and these are in general the same that were before necessary to the vinous stage, viz. a temperate degree of heat, a quantity of unfermented mucilage, and acid matter, such as tartar, and the free access of external air. When thus situated, the liquor soon passes into the acetous fermentation: but during this stage, the phenomena are not so remarkable as in the vinous; the motion of the fermenting mass is now less considerable, a gross unctuous matter separates to the bottom, the liquor loses its vinous taste and flavour, becomes sour, and on distillation affords no inflammable spirit. It is now the acetous acid or vinegar; and when separated by distillation from the unctuous lees, may be preserved a considerable length of time without undergoing the putrid change: to this last, however, it always approaches in the same manner as the vinous constantly verges to the acetous fermentation; and this will much more readily happen if the acid be allowed to remain with the unctuous feculent matter above-mentioned. When thus situated, the vinegar quickly loses its transparency, assumes a blackish colour, loses its sourness and agreeable flavour, has an offensive taste and smell, and, when distilled at a certain period of the process, yields volatile alkali.

The liquor is now arrived to the last stage, viz.

3. The PUTREFACTIVE Fermentation.

FROM the preceding phenomena, it is obvious that the same substance which is capable of the vinous and acetous, is capable of the putrefactive fermentation. It is perhaps impossible to induce the first without a mixture of the second; nor the second without a mixture of the third. Hence every wine is a little acid; and there are few vinegars without some disposition towards putrefaction, or without volatile alkali, neutralized by the acid which predominates. Notwithstanding this seeming continuation of one and the same process, the putrefaction of vegetables has its particular phenomena. The vegetable matter, if in a fluid state, becomes turbid, and deposits a large quantity of feculent matter; a considerable number of air bubbles are raised to the top; but their motion is not so brisk in the putrefactive as in the vinous, or even the acetous fermentation: neither the bulk nor heat of the liquor seems to be increased; but an acrid pungent vapour is perceived by the smell, and which, by chemical trials, is found to be the volatile alkali; by degrees this pungent odour is changed into one less pungent, but much more nauseous. If the same train of phenomena have taken place in a vegetable consisting of parts somewhat solid, its cohesion is broken down into a soft pulpy mass; this mass, on drying, entirely loses its odour, leaving a black charry-like residuum, containing nothing but earth and saline substances.

It is proper to observe, that though the circumstances favouring the putrefactive

putrefactive are the same with those requisite to the vinous and acetous fermentations, yet these several conditions are not so indispensable to the former as to the two latter stages. All vegetables have more or less tendency to putrefaction, and a great number of them are capable of the acetous fermentation: but the proportion of those capable of the vinous is not considerable; and these last will run into the putrid circumstances in which they cannot undergo the vinous or even the acetous fermentations. Thus flour made into a soft paste will become four; but it must be perfectly dissolved in water to make it fit for the vinous stage; whereas mere dampness is sufficient to make it pass to the putrid fermentation: besides the condition of fluidity, a less degree of heat, and a more limited access of air, are sufficient for producing the putrefactive fermentation.

It is therefore probable, that all vegetables, in whatever state they may be, are liable to a kind of putrefaction: in some the change is slow and gradual, but never fails at length to break down the texture and cohesion of the most solid.

We formerly observed, that the vapours separated during the vinous fermentation were fixed air; and it is indeed true, that in the incipient state of this fermentation a quantity of gas is still evolved. In the advanced state, however, we find these vapours of a different nature; they now tarnish silver, and render combinations of lead with the vegetable acids black. When produced in large quantity, and much confined, as happens in stacks of hay put up wet, they burst into actual flame, consuming the hay to ashes: on other occasions, the escape of these vapours discovers itself by an emission of light, as in the luminous appearance of rotten wood when placed in the dark. This gas is therefore different from that separated during the vinous fermentation; it is the inflammable air of Dr Priestly, or the hydrogen of Lavoisier, either pure or mixed, sometimes with sulphur, and sometimes with phosphorus.

We have thus, for the sake of clearness, and in order to comprehend the whole of the subject, traced the phenomena of fermentation through its different stages: it is proper, however, to observe, that though every vegetable that has suffered the vinous will proceed to the acetous and putrefactive fermentations, yet the second stage is not necessarily preceded by the first, nor the third by the second; or in other words, the acetous fermentation is not necessarily confined to those substances which have undergone the vinous, nor the putrefactive to those which have undergone the acetous fermentation. Thus gums dissolved in water pass to the acetous without undergoing the vinous fermentation; and glutinous matter seems to run into putrefaction without shewing any previous access: and farther, these changes frequently happen although the matter be under those conditions which are favourable to the preceding stages.

From the foregoing sketch, the importance of this subject in the study of Pharmacy will be obvious at first sight: it cannot, however, afford us any useful information on the native principles of vegetables: but it presents to us new products, the importance of which is well known in chemistry, in medicine, and in arts. The necessity of being well acquainted with the several facts will appear in the pharmaceutical history and

and preparation of many of our most valuable medicines. We are next to consider a set of no less complicated operations, viz.

II. Productions from vegetables by FIRE.

IN order to analyse, or rather to decompose vegetables by the naked fire, any given quantity of dry vegetable matter is put into a retort of glass or earth. Having filled the vessel about one half or two thirds, we place it in a reverberatory furnace, adapting it to a proper receiver. To collect the elastic fluids, which, if confined, would burst the vessels (and which, too, it is proper to preserve, as being real products of the analysis), we use a perforated receiver with a crooked tube, the extremity of which is received into a vessel full of water, or of mercury, and inverted into a basin containing the same fluid: by this contrivance, the liquid matters are collected in the same receiver, and the æiform fluids pass into the inverted vessel. If the vegetable is capable of yielding any saline matter in a concrete state, we interpose between the retort and the receiver another vessel, upon whose sides the salt sublimes. These things being properly adjusted, we apply at first a gentle heat, and increase it gradually, that we may observe the different products in proper order. At first an insipid watery liquor passes over, which is chiefly composed of the water of vegetation; on the heat being a little farther increased, this watery liquor, or *phlegm*, becomes charged with an oily matter, having the odour of the vegetable, if it possessed any in its entire state; along with this oil we also obtain an acid resembling vinegar, and which communicates to the oil somewhat of a saponaceous nature; on the heat being carried still farther, we procure more acid, with an oil of a dark colour, and the colour gradually deepens as the distillation advances. The oil now ceases to retain the peculiar odour of the vegetable; and, being scorched by the heat, sends forth a strong disagreeable smell like tar: it is then called *emphyreumatic oil*. About this time also some elastic vapours rush into the inverted vessel; these generally consist of inflammable or fixed airs, and very often of a mixture of both; the volatile salt now also sublimes, if the vegetable was of a nature to furnish it. By the time the matter in the retort has acquired a dull red heat nothing further will arise: we then stop; and allowing the vessels to cool, we find a mass of charcoal, retaining more or less the form and appearance of the vegetable before its decomposition.

We have thus described, in the order of their succession, the several products obtained from the generality of vegetables when analysed in close vessels and in a naked fire.

It is, however, to be understood, that the proportion of these principles turns out very various; the more succulent vegetables yield more water, and the more solid afford a greater quantity of the other principles. Independently also of this difference, the nature of the products themselves are found to differ in different vegetables: thus in the cruciform plants, and in the emulsive and farinaceous feeds, the saline matter which comes over with the water and oil is found to be alkaline: sometimes it is ammoniacal, from the combination of the acid with the volatile alkali passing over at the end of the process; it is also probable, that

that the acids of vegetables are not all of the same nature, though they exhibit the same external marks. When volatile alkali is obtained, it is always found in the mild effervescing state; it is procured, however, from a few vegetables only; and seldom in a concrete form, but generally dissolved in the phlegm: The plants containing much oily combustible matter seem to be those which more peculiarly yield inflammable air, while the mucilaginous appear to be as peculiarly fitted for affording the fixed air or aerial acid. The chemical properties of charcoal are always the same from whatever vegetable it has been produced; but it constantly contains some saline matter; it therefore remains that we should next decompose the charcoal, in order to obtain or separate the articles next to be mentioned.

The Fixed Salts of Vegetables.

WHEN vegetable charcoal has been burnt, there remains a quantity of ashes or cinders of a blackish grey or white colour: these, when boiled or infused in water, communicate to it a pungent saline taste; the salts thus held in solution may be reduced to a concrete state, by evaporating the water: this saline matter, however, is generally mixed with ferruginous, earthy, and other impurities. In this impure state it is the

Potashes used in Commerce.

THIS salt, or rather compound of different salts, is procured by burning large quantities of wood of any kind; and the process is called *incineration*: the predominating salt, however, is alkaline; and as the neutral salts are obtained to better advantage by other means, they are generally neglected in the purification of potashes. Potashes, then, freed from its impurities, and separated from the other salts by processes to be hereafter mentioned, is

The Fixed Vegetable Alkali.

ALKALIES in general are distinguished by a pungent taste, the very reverse of that of sourness; by their destroying the acidity of every sour liquor; and by their changing the blue colours of vegetables to a green: they more or less attract moisture from the air, and some of them deliquesce. The fixed alkalies which we shall at present consider more particularly, are fusible by a gentle heat: by a greater degree of heat they are dissipated; their fixity, therefore, is only relative to the other kind of alkali, viz. volatile: they dissolve and form glass with certain earths: and lastly, when joined with acids to the point of saturation, they form what are called *Neutral Salts*.

These characters will afford some necessary and preliminary knowledge of these substances in general; and we shall afterwards find that they are sufficient to distinguish these salts from all other saline bodies: it is necessary, however, to examine them more minutely, and our analysis has not yet reached so far as to present them in their simplest state. Previous to the discoveries of Dr. Black, the vegetable fixed alkali (which we at present speak of particularly), when separated from the foreign

foreign matter with which it is mixed in the ashes, was considered to be in its purest state: we shall afterwards find that it is still a compound body, and is really a neutral salt, compounded of pure alkali, and fixed air or the aerial acid. We presume, then, that the particular history of its chemical and medicinal properties will be better understood when we come to those processes by which it is brought to its most pure and simple state, and shall only therefore observe for the present, that fixed vegetable alkali, not only in its pure state, but also when neutralized by aerial acid, is always the same, from whatever vegetable it has been produced. Those of some sea-plants must, however, be excepted: the saline matter obtained from them is, like the former, in a mixed and impure state; it differs, however, from potashes, in containing an alkali that possesses different properties. The cinder of sea-plants containing this alkali is called

Soda.

SODA, as we have just now hinted, is produced by the incineration of the kali and other sea-plants: And from this impure and mixed mass of cinder, is obtained the marine, mineral, or muriatic alkali, or natron, as it is now denominated by the London college. This alkali has acquired these names, because it is the base of the common marine or sea salt: it differs from the vegetable alkali in being more easily crystallizable; when dried, it does not like the former attract humidity sufficient to form a liquid; it is somewhat less pungent to the taste, and has less attraction for acids than the vegetable alkali.

It is, however, to be observed, that this alkali, when deprived of fixed air, that is to say, when brought to its purest state, can scarcely, if at all, be distinguished from the vegetable alkali; and indeed the true distinction can only be formed from their combinations, each of them affording with the same acid very different neutral salts. It belonged to this place to mention some of the characters of alkalis in general, and also some of those marks by which the vegetable and mineral alkalis are distinguished from each other; but for a more particular history of their chemical and medicinal properties, we refer to the account of their pharmaceutical preparations. As the volatile alkali is rarely produced from vegetables, but is generally obtained from animal matter, we shall consider that kind of alkali when we come to analyse the animal kingdom.

Of Vegetable Earth.

AFTER all the saline matter contained in the ashes of vegetables has been washed off by the processes before mentioned, there remains an insipid earthy-like powder, generally of a whitish colour, insoluble in water, and from which some iron may be attracted by the magnet. It is said to have formed alum with the vitriolic acid; a kind of selenite has also been obtained, but somewhat different from that produced by the union of the same acid with calcareous earth; this residuum of burnt vegetables differs however from calcareous earth, in not being susceptible of becoming quicklime by calcination. Later experiments have

have shewn that it is a combination of calcareous earth with phosphoric acid : so that it is similar to the ashes of burnt bones.

We have thus finished the analysis of vegetables by the naked fire : and have only to observe, that, like the analysis by fermentation, it can afford us no useful information on the native principles of the vegetable itself.

When chemistry began first to be formed into a rational science, and to examine the component parts and internal constitution of bodies, it was imagined, that this resolution of vegetables by fire, discovering to us all their active principles, unlogged and unmixed with each other, would afford the surest means of judging of their medicinal powers. But on prosecuting these experiments, it was soon found that they were insufficient for that end : that the analyses of poisonous and esculent plants were nearly and often precisely the same : that by the action of a burning heat, the principles of vegetables are not barely separated, but altered, transposed, and combined into new forms ; in-
somuch that it was impossible to know in what form they existed, and with what qualities they were endowed, before these changes and transpositions happened. If, for example thirty two ounces of a certain vegetable substance are found to yield ten ounces and a half of acid liquor, above one ounce and five drachms of oil, and three drachms and a half of fixed alkaline salt : What idea can this analysis give of the medicinal qualities of *gum Arabic* ?

III. SUBSTANCES naturally contained in Vegetables, and separable by Art without Alteration of their Native Qualities.

It has been supposed, that there is one general fluid or blood which is common to all vegetables, and from which the fluids peculiar to particular plants and their parts are prepared by a kind of secretion : To this supposed general fluid, botanists have given the name of *Sap*. This opinion is rendered plausible from the analogy in many other respects between vegetable and animal substances : and indeed if we consider the water of vegetation as this general fluid, the opinion is perhaps not very far from the truth ; but the notion has been carried much farther than supposing it to be mere water, which opinion however does not seem to be well supported by experience. It is difficult to extract this sap without any mixture of the constituent parts of the vegetables which afforded it : and in a few vegetables, from which it distils by wounding the bark, we find this supposed general blood possessing various properties : Thus the juice effused from a wounded birch is considerably different from that poured out from an incision in the vine.

Vegetables, like animals, contain an oil in two different states. That is, in several vegetables a certain quantity of oil is superabundant to their constitution, is often lodged in distinct reservoirs, and does not enter into the composition of their other principles : in most vegetables, again, another quantity of oil is combined, and makes a constituent part of their substance. Of this last we formerly spoke in our analysis of vegetables by fire ; and it is the former we mean to consider under the three following heads.

I. GROSS

I. GROSS OILS.

GROSS OILS abound chiefly in the kernels of fruits, and in certain seeds; from which they are commonly extracted by expression, and are hence distinguished by the name of *Expressed Oils*. They are contained also in all the parts of all vegetables that have been examined, and may be forced out by vehemence of fire; but their qualities are much altered in the process by which they are extracted or discovered, as we have seen under the foregoing head.

These oils, in their common state, are not dissoluble either in vinous spirits or in water, though by means of certain intermedia they may be united both with the one and the other. Thus a skilful interposition of sugar renders them miscible with water into what are called lochoes and oily draughts: by the intervention of gum or mucilage they unite with water into a milky fluid: by alkaline salts they are changed into a sops, which is miscible both with water and spirituous liquors, and is perfectly dissolved by the latter into an uniform transparent fluid. The addition of any acid to the sopy solution attacks the alkaline salt; and the oil, which of course separates, is found to have undergone this remarkable change, that it now dissolves without any intermedium in pure spirit of wine.

Expressed oils, exposed to the cold, lose their fluidity greatly: some of them, in a small degree of cold, congeal into a consistent mass. Kept for some time in a warm air, they become thin and highly rancid: their soft, lubricating, and relaxing quality is changed into a sharp acrimonious one: and in this state, instead of allaying, they occasion irritation; instead of obtunding corrosive humours, they corrode and inflame. These oils are liable to the same noxious alteration while contained in the original subjects: hence arises the rancidity which the oily seeds and kernels, as almonds and other seeds, are so liable to contract in keeping. Nevertheless, on triturating these seeds or kernels with water, the oil, by the intervention of the other matter of the subject, unites with the water into an emulsion or milky liquor, which, instead of growing rancid, turns sour on standing.

It appears then that some kind of fermentation goes on in the process of oils in the rancid state; and it would seem from some experiments by Mr Macquer, that an acid is evolved, which renders them more soluble in spirit of wine than before. From some experiments of modern French chemists, oils are supposed to become rancid, in consequence of their having absorbed a portion of oxygen or the acidifying principle.

In the heat of boiling water, and even in a degree of heat as much exceeding this as the heat of boiling water does that of the human body, these oils suffer little dissipation of their parts. In a greater heat they emit a pungent vapour, seemingly of the acid kind; and when suffered to grow cold again, they are found to have acquired a greater degree of consistence than they had before, together with an acrid taste. In a heat approaching to ignition, in close vessels, the greatest part of the oil arises in an empyreumatic state, a black coal remaining behind.

2. SEBA-

2. SEBACEOUS MATTER.

From the kernels of some fruits, as that of the chocolate nut, we obtain, instead of a fluid oil, a substance of a butyraceous consistence; and from others, as the nutmeg, a solid matter as firm as tallow. These concretions are most commodiously extracted by boiling the substance in water: the sebaceous matter, liquefied by the heat, separates and arises to the surface, and resumes its proper consistence as the liquor cools.

The substances of this class have the same general properties with expressed oils, but are less disposed to become rancid in keeping than most of the common fluid oils. It is supported by the chemists, that their thick consistence is owing to a larger admixture of the acidifying principle: for, in their resolution by fire, they yield a vapour more sensibly acid than the fluid oils: and fluid oils, by the admixture of concentrated acids, are reduced to a thick or solid mass.

3. ESSENTIAL OILS.

ESSENTIAL oils are obtained only from those vegetables, or parts of vegetables that are considerably odorous. They are the direct principle, in which the odour, and oftentimes the warmth, pungency, and other active powers of the subject, reside; whence their name of *Essences* or *Essential oils*.

Essential oils are secreted fluids: and are often lodged in one part of the plant, while the rest are entirely void of them. Sometimes they are found in separate spaces or receptacles, visible by the naked eye, as in the rind of lemons, oranges, citrons, and many other fruits. These receptacles may be broken by pressing the peel; and the oil squeezed out is visible in the form of very minute drops; and if it is squeezed in the flame of a candle, it inflames, and forms a stream of liquid fire; hence, too, an oleosacharum may be made, by rubbing the exterior surface of these peels with a piece of lump sugar, which at once tears open these vesicles, and absorbs their contained oil.

Essential oils unite with rectified spirit of wine, and compose with it one homogeneous transparent fluid; though some of them require for this purpose a much larger proportion of spirit than others. The difference of their solubility perhaps depends on the quantity of disengaged acid; that being found by Macquer not only to promote the solution of essential oils, but even of those of the unctuous kind. Water also, though it does not dissolve their whole substance, may be made to imbibe some portion of their most subtle matter, so as to become considerably impregnated with their flavour; by the admixture of sugar, gum, the yolk of an egg, or alkaline salts, they can be wholly dissolved or suspended in water. Digested with volatile alkali, they undergo various changes of colour, and some of the less odorous acquire considerable degrees of fragrance; while fixed alkali universally impairs their odour.

The specific gravity of most of these oils is less than that of water; some of them, however, are so heavy as to sink in water; but these varieties shall be noticed when we come to their preparation.

In the heat of boiling water, these oils totally exhale; and they are commonly extracted from subjects that contain them in consequence of this property.

Essential oils, exposed for some time to a warm air, suffer an alteration very different from that which the expressed undergo. Instead of growing thin, rancid, and acrimonious, they gradually become thick, and at length harden into a solid brittle concrete; with a remarkable diminution of their volatility, fragrance, pungency, and warm stimulating quality. In this state they are found to consist of two kinds of matter; a fluid oil, volatile in the heat of boiling water, and nearly of the same quality with the original oil; and of a grosser substance which remains behind, and which is not exhalable without a burning heat, or such as changes its nature and resolves it into an acid, empyreumatic oil, and a black coal.

The admixture of a concentrated acid instantly produces, in essential oils, a change nearly similar to that which time effects. In making these kinds of mixtures, the operator ought to be on his guard; for when a strong acid, particularly that of nitre is poured hastily on an essential oil, a great heat and ebullition ensue, and the mixture bursts into flame with an explosion. The union of expressed oils with acids, is accompanied with much less conflict.

4. CONCRETE ESSENTIAL OILS.

SOME vegetables, as roses and elecampane root, instead of a fluid essential oil, yield a substance possessing the same general properties, but of a thick or sebaceous consistence. This substance appears to be of as great volatility and subtilty of parts, as the fluid oils: it equally exhales in the heat of boiling water, and concretes on the surface of the collected vapour. The total exhalation of this matter, and its concreting again into its original consistent state, without any separation of it into a fluid and a solid part, distinguishes it from essential oils that have been thickened or indurated by age or by acids.

5. CAMPHOR.

CAMPBOR is a solid concrete, obtained chiefly from the woody parts of a certain Indian tree. It is volatile like essential oils, and soluble both in oils and ardent spirits: it unites freely with water by the intervention of gum, but very sparingly and imperfectly by the other intermedia that renders oils miscible with watery liquors. It differs from the sebaceous as well as fluid essential oils, in suffering no sensible alteration from long keeping; in being totally exhalable, not only by the heat of boiling water, but in a warm air, without any change or separation of its parts, the last particle that remains unexhaled appearing to be of the same nature with the original camphor: in its receiving no empyreumatic impression, and suffering no resolution, from any degree of fire to which it can be exposed in close vessels, though readily combustible in open air; in being dissolved by concentrated acids into a liquid form; and in several other properties which it is needless to specify in this place.

6. RESIN

6. RESIN.

ESSENTIAL oils, indurated by age or acids, are called *Resins*. When the indurated mass has been exposed to the heat of boiling water, till its more subtile part, or the pure essential oil that remained in it, has exhaled, the gross matter left behind is likewise called resin. We find, in many vegetables, resins analogous both to one and the other of these concretes; some containing a subtile oil, separable by the heat of boiling water, and others containing nothing that is capable of exhaling in that heat.

Resins in general dissolve in rectified spirit of wine, though some of them much more difficultly than others: it is chiefly by means of this dissolvent that they are extracted from the subjects in which they are contained. They dissolve also in oils both expressed and essential; and may be united with watery liquors by means of the same intermedia which render the fluid oils miscible with water. In a heat less than that of boiling water, they melt into an oily fluid; and in this state they may be incorporated with one another. In their resolution by fire, in close vessels, they yield a manifest acid, and a large quantity of empyreumatic oil.

7. GUM.

GUM differs from the foregoing substances in being unflammable; for though it may be burnt to a coal, and thence to ashes, it never yields any flame. It differs remarkably also in the proportion of the principles into which it is resolved by fire; the quantity of empyreumatic oil being far less, and that of the acid far greater. In the heat of boiling water it suffers no dissipation: nor does it liquefy like resins; but continues unchanged, till the heat be so far increased as to scorch or turn it to a coal.

By a little quantity of water, it is softened into a viscous adhesive mass, called mucilage: by a larger quantity it is dissolved into a fluid, which proves more or less glutinous according to the proportion of gum. It does not dissolve in vinous spirits, or in any kind of oil: nevertheless when softened with water into a mucilage, it is easily miscible both with the fluid oils and with resins: which by this means become soluble in watery liquors along with the gum, and are thus excellently fitted for medicinal purposes.

This elegant method of uniting oils with aqueous liquors, which has been kept a secret in a few hands, appears to have been known to Dr Grew. "I took (says he) oil of aniseeds, and pouring it upon *another body*, I so ordered it, that it was thereby turned into a perfect milk-white balsam or butter; by which means the oil became minglable with any vinous or watery liquor, easily and instantaneously dissolving therein in the form of a milk. And note, this is done without the least alteration of the smell, taste, nature, or operation of the said oil. By somewhat the same means any other stillatitious oil may be transformed into a milk-white butter, and in like manner be mingled with water, or any other liquor; which is of various use in medicine, and what I find oftentimes very convenient and advantageous to be done."

(Grew

(*Grew of Mixture, chap. v. inß. i. § 7.*) This inquiry has lately been further prosecuted in the first volume of the Medical Observations published by a society of physicians in London; where various experiments are related, for rendering oils, both essential and expressed, and different unctuous and resinous bodies, soluble in water by the mediation of gum. Mucilages have also been used for suspending crude mercury, and some other ponderous and insoluble substances: the mercury is by this means considerably divided; but the particles are very apt to run together or subside, if a pretty constant agitation be not kept up.

As oily and resinous substances are thus united to water by the means of gum, so gums may in like manner be united to spirit of wine by the intervention of resins and essential oils; though the spirit does not take up near so much of the gum as water does of the oil or resin.

Acid liquors, though they thicken pure oils, or render them consistent, do not impede the dissolution of gum, or of oils blended with gum. Alkaline salts, on the contrary, both fix and volatile, though they render pure oils soluble in water, prevent the solution of gum, and of mixtures of gum and oil. If any pure gum be dissolved in water, the addition of any alkali will occasion the gum to separate, and fall to the bottom in a consistent form; if any oily or resinous body was previously blended with the gum, this also separates, and either sinks to the bottom, or rises to the top, according to its gravity.

8. GUM RESIN.

By gum-resin is understood a mixture of gum and resin. Many vegetables contain mixtures of this kind, in which the component parts are so intimately united, with the interposition perhaps of some other matter, that the compound, in a pharmaceutical view, may be considered as a kind of distinct principle; the whole mass dissolving almost equally in aqueous and in spiritous liquors; and the solutions being not turbid or milky, like those of the grosser mixtures of gum and resin, but perfectly transparent. Such is the astrigent matter of bistort root, and the bitter matter of gentian. It were to be wished that we had some particular name for this kind of matter; as the term Gum-resin is appropriated to the grosser mixtures, in which the gummy and resinous parts are but loosely joined, and easily separable from each other.

We shall afterwards find that it will be convenient to imitate this natural combination by art. As the effects of medicines very generally depend on their solubility in the stomach, it is often necessary to bring their more insoluble parts, such as resinous and oily matters, into the state of gum resin: this is done, as we have mentioned in the former article, by the mediation of mucilage. By this management these matters become much more soluble in the stomach; and the liquor thus prepared is called an emulsion.

9. SALINE MATTER.

OF the saline juices of vegetables there are different kinds, which have hitherto been but little examined: the sweet and the acid ones are the most plentiful and the best known.

There have lately, however, been discovered a considerable variety of salts

salts in different vegetables. The mild fixed alkali, which was formerly considered as a product of the fire, has been obtained from almost all plants by macerating them in acids; the vegetable alkali is the most common, but the mineral is also found in the marine plants. Besides the fixed alkali, several other salts have been detected in different vegetables; such as vitriolated tartar, common salt, Glauber's salt, nitre, ferri-fuge salt, and selenite. From some experiments, too, the volatile alkali has been supposed to exist ready formed in many plants of the cruciform or tetradynamian tribe.

It is, however, to be understood, that though some of these salts are really products of vegetation, others of them are frequently adventitious, being imbibed from the soil without any change produced by the functions of the vegetable.

The juices of vegetables, exposed to a heat equal to that of boiling water, suffer generally no other change than the evaporation of their watery parts; the saline matter remaining behind, with such of the other fixed parts as were blended with it in the juice. From many plants, after the exhalation of great part of the water, the saline matter gradually separates in keeping, and concretes into little solid masses, leaving the other substances dissolved or in a moist state; from others, no means have yet been found of obtaining a pure concrete salt.

The salts more peculiarly native and essential to vegetables, are the sweet and the sour: these two are frequently blended together in the same vegetable, and sometimes pass into each other at different ages of the plants. Of the four salts several kinds are known in pharmacy and in the arts; such as those of sorrel, of lemons, oranges, citrons, &c. The saccharine salts are also obtained from a great number of vegetables; they may in general be easily discovered by their sweet taste: the sugar-cane is the vegetable from which this saline matter is procured in greatest quantity and with most profit in commerce. For its medicinal and chemical properties we refer to the article SUGAR.

The sweet and sour salts above-mentioned dissolve not only in water, like other saline bodies, but many of them, particularly the sweet, in rectified spirit also. The gross oily and gummy matter, with which they are almost always accompanied in the subject, dissolves freely along with them in water, but is by spirit in great measure left behind. Such heterogeneous matters as the spirit takes up, are almost completely retained by it, while the salt concretes; but of those which water takes up, a considerable part always adheres to the salt. Hence essential salts, as they are called, prepared in the common manner from the watery juices of vegetables, are always found to partake largely of the other soluble principles of the subject; while those extracted by spirit of wine are more pure. By means of rectified spirit, some productions of this kind may be freed from their impurities. Perfect saccharine concretions obtained from many of our indigenous sweets may be thus purified.

There is another kind of saline matter obtained from some resinous bodies, particularly from benzoin, which is of a different nature from the foregoing, and is a peculiar acid, soluble both in water and in vinous spirits, though difficultly and sparingly in both: They shew several evi-
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dent marks of acidity, have a smell like that of the refin from which they are obtained, exhale in a heat equal to that of boiling water, or a little greater, and are inflammable in the fire.

10. FARINA OF FLOUR.

THIS substance partakes of the nature of gum, but has more taste, is more fermentable, and much more nutritive. It abounds in very many vegetables, and is generally deposited in certain parts, seemingly for the purpose of its being more advantageously accommodated to their nourishment and growth. Several of the bulbous and other roots, such as those of potatoes, briony, those from which cassava is extracted, salep, and many others, contain a great quantity of a white *farcula* resembling and really possessing the properties of farina. The plants of the leguminous tribe, such as peas and beans, are found also to abound with this matter. But the largest quantity of farina resides in grains, which are therefore called *farinaceous*. Of this kind are wheat, rye, barley, oats, rice, and other similar plants.

At first sight farina appears to be one homogeneous substance: it is, however, found to be a compound of three different and separable parts. To illustrate this, we shall take as an example the farina of wheat, being the vegetable which affords it in greatest quantity, and in its most perfect state. To separate these different parts, we form a paste with any quantity of flour and cold water; we suspend this paste in a bag of muslin or such like cloth; we next let fall on it a stream of cold water from some height, and the bag may now and then be gently squeezed; the water in its descent carries down with it a very fine white powder, which is received along with the water in a vessel placed below the bag: The process must be continued till no more of this white powder comes off, which is known by the water that passes through the bag ceasing to be of a milky colour. The process being now finished, the farina is found to be separated into three different substances: the glutinous or vegeto-animal part remains in the bag; the amyllum or starch is deposited from the water which has been received in the vessel placed below the bag; and lastly, a mucous matter is held dissolved in the same water from which the starch has been deposited: This mucous part may be brought to the consistence of honey, by evaporating the water which kept it in solution.

These several parts are found also to differ remarkably in their sensible and chemical properties. The vegeto-animal part is of a whitish grey colour, is a tenacious, ductile, and elastic matter, partly possessing the texture of animal membranes. Distilled in a retort, it yields, like all animal matters, a volatile alkali; and its coal affords no fixed alkali. It is not only insoluble, but even indissoluble in water; both which appear from its remaining in the bag after long continued lotions. Like gums, it is insoluble in alcohol, in oils, or ether: but is also insoluble in water, and yields on distillation products very different from those afforded by gums: It is therefore of an animal nature, and approaches perhaps nearer to the coagulable lymph of animals than to any other substance.

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The fixed alkali, by means of heat, dissolves the gluten *vegeto-animale*, but when it is precipitated from this solution by means of acids, it is found to have lost its elasticity. The mineral acids, and especially the nitrous, are also capable of dissolving the *vegeto-animal* part of the *farina*.

The starch, *amylum*, or the amylaceous matter makes the principal part of the *farina*. As we before noticed, it is that fine powder deposited from the water which had pervaded the entire *farina*: it is of a greyish white colour, but can be rendered much whiter by making it undergo a certain degree of fermentation. Starch is insoluble in cold water; but in hot water forms a transparent glue; hence the necessity of employing cold water in separating it from the *vegeto-animal* part. Distilled in a retort, it yields an acid phlegm; and its coal affords, like other vegetables, a fixed alkaline salt. As starch forms the greatest part of the *farina*, it is probably the principal nutritive constituent in bread.

The mucous, or rather the *mucofo-saccharine* matter, is only in a very small quantity. This substance on distillation is found to exhibit the phenomena of *sugar*. The use of this matter seems to be that of producing the vinous fermentation: and we may observe that the preparation of good bread probably depends on a proper proportion of the three different parts above described: viz. that the vinous fermentation is promoted by the *mucofo saccharine* part, the acetous by the starch, and the putrid by the gluten *vegeto-animale*. From different states or degrees of these several stages of fermentation the qualities of good bread are probably derived. What remains on this very important subject will be taken up when we come to speak of wheat in the *Materia Medica*.

II. Of the COLOURING MATTER of Vegetables.

THE colouring matter of vegetables seems to be of an intermediate nature between the gummy and resinous part. It is equally well extracted by water and by rectified spirit from many plants: it is also, however, procurable in the form of a *lake*, not at all soluble in either of these menstrua. It would seem that the colouring matter, strictly so called, has hitherto eluded the researches of chemists. It is only the *basse or nidus*, in which the real colouring matter is embodied, that chemistry has as yet reached; and on the chemical properties of this *basse*, colours are capable of being extracted by different menstrua, and of being variously accommodated to the purposes of dying. The substances from which the colours of vegetables are *immediately* derived, is without doubt a very subtle body. Since plants are known to lose their colour when excluded from the light of the sun, there is reason to think that the *immediately* colouring substance is primarily derived from the matter of the sun, somewhat elaborated by vegetable life.

Many of these dyes are evolved or variously modified by chemical operations. Thus a colouring matter is sometimes deposited in the form of a *secula* during the putrefaction of the vegetable; in others it is evolved or changed by alum, by acids, or by alkali. We may also observe, that any part of the vegetable may be the base of the colouring matter. This appears

appears from the solubility of the different dyes in their proper menstrua; and in these solutions we have not been able to separate the real colouring matter from the base in which it is invicinated. After all, then, we must conclude, that a full investigation of this subject more properly belongs to the sublimer parts of chemistry, than to the business in which we are at present engaged.

The colouring drugs will be considered in their proper places.

In finishing our history of the vegetable kingdom, it only remains that we should offer some

General Observations on the Foregoing Principles.

1. **ESSENTIAL** oils, as already observed, are obtainable only from a few vegetables: but gross oil, resin, gum, and saline matter, appear to be common, in greater or less proportion, to all; some abounding more with one, and others with another.

2. The several principles are in many cases intimately combined: so as to be extracted together from the subject, by those dissolvents, in which some of them separately could not be dissolved. Hence watery infusions and spirituous tinctures of a plant, contain respectively more substances than those of which water or spirit is the proper dissolvent.

3. After a plant has been sufficiently infused in water, all that spirit extracts from the residuum may be considered as consisting wholly of such matter as directly belongs to the action of spirit. And on the contrary, when spirit is applied first, all that water extracts afterwards may be considered as consisting only of that matter of which water is the direct dissolvent.

4. If a vegetable substance, containing all the principles we have enumerated, be boiled in water, the essential oil, whether fluid or concrete, and the camphor, and volatile essential salt, will gradually exhale with the steam of the water, and may be collected by receiving the steam in proper vessels placed beyond the action of the heat. The other principles not being volatile in this degree of heat, remain behind: the gross oil and sebaceous matter float on the top: the gummy and saline substance, and a part of the resin, are dissolved by the water, and may be obtained in a solid form by straining the liquor, and exposing it to a gentle heat till the water has exhaled. The rest of the resin, still retained by the subject, may be extracted by spirit of wine, and separated in its proper form by exhaling the spirit. On these foundations, most of the substances contained in vegetables may be extracted, and obtained in a pure state, however they may be compounded together in the subject.

5. Sometimes one or more of the principles is found naturally disengaged from the others, lying in distinct receptacles within the subject, or extravasated and accumulated on the surface. Thus, in the dried roots of angelica, cut longitudinally, the microscope discovers veins of resin. In the flower cups of hypericum, the leaves of the orange-tree, transparent points are distinguished by the naked eye: which, at first view, seem to be holes, but on a closer examination are found to be

be little vesicles filled with essential oil. In the bark of the fir, pine, larch, and some other trees, the oily receptacles are extremely numerous, and so copiously supplied with the oily and resinous fluid, that they frequently burst, especially in the warm climates, and discharge their contents in great quantities. The Acacia tree in Egypt, and the plumb and cherry in Europe yield almost pure gummy exudations. From a species of ash is secreted the saline sweet substance manna; and the only kind of sugar with which the ancients were acquainted, appears to have been a natural exudation from the cane.

6. The foregoing principles are, as far as is known, all that naturally exist in vegetables; and all that art can extract from them, without such operations as change their nature, and destroy their original qualities. In one or more of these principles, the colour, smell, taste, and medicinal virtues, of the subject, are generally found concentrated.

7. In some vegetables, the whole medicinal activity resides in one principle. Thus, in sweet almonds, the only medicinal principle is a gross oil; in horse-radish root, an essential oil; in jalap root, a resin; in marsh-mallow root, a gum; in the leaves of sorrel, an acid.

8. Others have one kind of virtue residing in one principle, and another in another. Thus Peruvian bark has an astringent resin, and a bitter gum; wormwood, a strong-flavoured essential oil, and a bitter gum-resin.

9. The gross insipid oils and sebaceous matters, the simple insipid gums, and the sweet and acid saline substances, seem to agree both in their medicinal qualities, and in their pharmacæutic properties.

10. But essential oils, resins, and gum-resins, differ much in different subjects. As essential oils are universally the principle of odour in vegetables, it is obvious that they must differ in this respect as much as the subjects from which they are obtained. Resins frequently partake of the oil, and consequently of the differences depending on it; with this farther diversity, that the gross resinous part often contains other powers than those which reside in oils. Thus from wormwood a resin may be prepared, containing not only the strong smell and flavour, but likewise the whole bitterness of the herb; from which last quality the oil is entirely free. The bitter, astringent, purgative, and emetic virtue of vegetables, generally reside in different sorts of resinous matter, either pure or blended with gummy and saline parts; of which kind of combinations there are many so intimate, that the component parts can scarcely be separated from each other, the whole compound dissolving almost equally in aqueous and spirituous menstrua.

11. There are some substances also, which, from their being totally soluble in water, and not in spirit, may be esteemed to be mere gums; but which, nevertheless, possess virtues never to be found in the simple gums. Such are the astringent gum called acacia, and the purgative gum extracted from aloes.

12. It is supposed that vegetables contain certain subtile principles different in different plants, of too great tenuity to be collected in their pure state and of which oils, gums, and resins, are only the matrices or vehicles. This inquiry, however is foreign to the purposes of pharmacy, which is concerned only about grosser and more sensible objects. When

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we obtain from an odoriferous plant an essential oil, containing in a small compass the whole fragrance of a large quantity of the subject, our intentions are equally answered, whether the substance of the oil be the direct odorous matter, or whether a fragrant principle more subtile than itself is diffused through it. And when this oil, in long keeping, loses its odour, and becomes a resin, it is equal, in regard to the present considerations, whether the effect happens from the avolation of a subtile principle, or from a change produced in the substance of the oil itself.

SECT. II.

ANIMALS.

FROM the history we have already given of the vegetable kingdom, our details on animal substances may, in many particulars, be considerably abridged. All animals are fed on vegetables, either directly or by the intervention of other animals. No part of their substance is derived from any other sources except water and air. The small quantity of salt used by man and some other animals, is only necessary as a seasoning, or as a stimulus to the stomach. As all animal matter then is derived from vegetables, we accordingly find that the former is capable of being resolved into the same principles as those of the latter. Thus, by repeated distillations, we obtain from animal substances the same proximate principles which we found in vegetables. But though the principles of vegetable and animal substances are fundamentally the same, yet these principles are combined in a very different manner. It is exceedingly rare that animal substances are capable of the vinous or acetous fermentations; and the putrefactive, into which they run remarkably fast, is also different in some particulars from the putrefaction of vegetables; the smell is much more offensive, in the putrefaction of animal than of vegetable substances. The putrefaction of urine is indeed accompanied with a peculiar fetor, by no means so intolerable as that of other animal matters: this is probably owing to the pungency derived from the volatile alkali. When analysed by a destructive heat, animals afford products very different from those of vegetables: the empyreumatic oil has a particular, and much more fetid odour; and the volatile salt, instead of being an acid, as it is in most vegetables, is found in animals to be a volatile alkali. Chemists have spoken of an acid procurable from animal substances; and indeed certain parts of animal bodies are found to yield a salt of this kind; but it by no means holds with animal substances in general; and though the proofs to the contrary were even conclusive, it is confessedly in so small a quantity as not to deserve any particular regard. In some animals, however, an acid exists uncombined and ready formed in their bodies. This is particularly manifest in some insects, especially ants, from which a peculiar acid is procured by boiling them in water. The solid parts of animal bodies, as the muscles, teguments, tendons, cartilages, and even the bones, when boiled with water, give a gelatinous matter or glue resembling the vegetable gums, but much more adhesive. We must,

must, however, except the horny parts and the hair, which seem to be little soluble either in water or in the liquors of the stomach. The acids, the alkalies, and quicklime, are also found to be powerful solvents of animal matters. It is from the solid parts that the greatest quantity of volatile alkali is obtained; it arises along with a very fetid empyreumatic oil, from which it is in some measure separated by repeated rectifications. This salt is partly in a fluid, and partly in a concrete state; and from its having been anciently prepared in the greatest quantity from the horns of the hart, it has been called *salt* or *spirit of hartshorn*. Volatile alkali is, however, procurable from all animals, and from almost every part of animal bodies, except fat. Though we are sometimes able to procure fixed alkali from an animal cinder, yet it is probable that this salt did not make any part of the living animal, but rather proceeded from the introduction of some saline matter, incapable of being assimilated by the functions of the living creature.

In speaking of the fluid parts of animals, we should first examine the general fluid, or blood, from whence the rest are secreted. The blood, which at first sight appears to be an homogeneous fluid, is composed of several parts, easily separable from each other, and which the microscope can even perceive in its uncoagulated state. On allowing it to stand at rest, and to be exposed to the air, it separates into what are called the *crassamentum* and the *serum*. The *crassamentum*, or cruor, chiefly consists of the red globules, joined together by another substance, called the coagulable lymph: the chemical properties of these globules are not as yet understood; but they seem to contain the greatest quantity of the iron found in the blood. The serum is a yellowish sub-viscid liquor, having little sensible taste or smell: at a heat of 156 of Fahrenheit, it coagulates. This coagulation of the serum is also owing to its containing a matter of the same nature with that in the *crassamentum*, viz. the coagulable lymph: whatever, then, coagulates animal blood, produces that effect on this concrescible part. Several causes and many different substances are capable of effecting this coagulation; such as contact of air, heat, alcohol, mineral acid, and their combinations with earths, as alum, and some of the metallic salts. The more perfect neutral salts are found to prevent the coagulation, such as common salt and nitre.

Of the fluids secreted from the blood, there are a great variety in men and other animals. The excrementitious and redundant fluids, afford in general the greatest quantity of volatile alkali and empyreumatic oil; some of the secreted fluids, on a chemical analysis, yield products in some degree peculiar to themselves. Of this kind is the urine, which is found to contain in the greatest abundance the noted salt formed from the phosphoric acid and volatile alkali. The fat, too, differs from the other animal matters, in yielding by distillation a strong acid, but no volatile alkali. There is also much variety in the quantity and state of the combination of the saline and other matters in different secreted fluids; but for a fuller investigation of this and other parts of the subject, we refer to the doctrines of Anatomy, Physiology, and Chemistry: with which it is more immediately connected than with the Elements of Pharmacy.

Animal

Animal oils and fats, like the gross oils of vegetables, are not of themselves soluble either in water or vinous spirit: but they may be united with water by the intervention of gum or mucilage. Most of them may be changed into sope by fixed alkaline salts; and be thus rendered miscible with spirit, as well as water.

The odorous matter of some odoriferous animal substances, as musk, civet, castor, is like essential oil, soluble in spirit of wine, and volatile in the heat of boiling water. Carthuser relates, that from castor an actual essential oil has been obtained in a very small quantity, but of an exceedingly strong diffusive smell.

The vesicating matter of cantharides, and those parts of sundry animal substances in which their peculiar taste resides, are dissolved by rectified spirit, and seem to have some analogy with resins and gummy resins.

The gelatinous principle of animals, like the gum of vegetables, dissolves in water, but not in spirit or in oils: like gums also, it renders oils and fats miscible in water into a milky liquor.

Some insects, particularly the ant, are found to contain an acid juice, which approaches nearly to the nature of vegetable acids.

There are, however, sundry animal juices which differ greatly, even in these general kinds of properties, from the corresponding ones of vegetables. Thus animal serum, which appears analogous to vegetable gummy juices, has this remarkable difference, that though it mixes uniformly with cold or warm water, yet on considerably heating the mixture, the animal-matter separates from the watery fluid, and concretes into a solid mass. Some physicians have been apprehensive, that the heat of the body, in certain diseases, might rise to such a degree, as to produce this dangerous or mortal concretion of the serous humours: but the heat requisite for this effect is greater than the human body appears capable of sustaining, being nearly about the middle point between the greatest human heat commonly observed and that of boiling water.

The soft and fluid parts of animals are strongly disposed to run into putrefaction; they putrify much sooner than vegetable matters; and when corrupted prove more offensive.

This process takes place, in some degree, in the bodies of living animals, as often as the juices stagnate long, or are prevented, by an obstruction of the natural emunctories, from throwing off their more volatile and corruptible parts.

During putrefaction, a quantity of air is generated; all the humours become gradually thinner, and the fibrous parts more lax and tender. Hence the tympany, which succeeds the corruption of any of the viscera, or the imprudent suppression of dysenteries by astringents; and the weakness and laxity of the vessels observable in scurvies, &c.

The crassamentum of human blood changes, by putrefaction, into a dark livid-coloured liquor; a few drops of which tinge the serum with a tawny hue, like the ichor of sores and dysenteric fluxes.

Putrid crassamentum also changes a large quantity of recent urine to a flame-coloured water, so common in fevers, and in the scurvy. This mixture, after standing an hour or two, gathers a cloud resembling

what is seen in the crude water of acute distempers, with some oily matter on the surface, like the scum which floats on scorbutic urine.

The serum of the blood deposites, in putrefaction, a sediment resembling a well-digested pus, and changes to a faint olive green. A serum so far putrefied as to become green, is perhaps never to be seen in the vessels of living animals; but in dead bodies this serum is to be distinguished by the green colour which the flesh acquires in corrupting. In salted meats this is commonly ascribed to the brine, but erroneously; for that has no power of giving this colour, but only of qualifying the taste, and in some degree, the ill effects of corrupting aliments. In foul ulcers and other sores, where the serum is left to stagnate long, the matter is likewise found of this colour, and is then always acrimonious.

The putrefaction of animal substances is prevented or retarded by most saline matters, even by the fixed and volatile alkaline salts, which have generally been supposed to produce a contrary effect. Of all the salts that have been tried, sea salt seems to resist putrefaction the least: in small quantities, it even accelerates the process. The vegetable bitters, as chamomile flowers, are much stronger antiseptics, not only preserving flesh long uncorrupted, but likewise somewhat correcting it when putrid: the mineral acids have this last effect in a more remarkable degree. Vinous spirits, aromatic and warm substances, and the acrid plants, falsely called *alkalescent*, as scurvy grass and horse-radish, are found also to resist putrefaction. Sugar and camphor are found to be powerfully antiseptic. Fixed air, or the aerial acid, is likewise thought to resist putrefaction; but above all, the nitrous air is found to be the most effectual in preserving animal bodies from corruption. The list of the septics, or of those substances that promote putrefaction, is very short; and such a property has only been discovered in calcarous earths and magnesia, and a very few salts, which have these earths for their bases.

It is observable, that notwithstanding the strong tendency of animal matters to putrefaction, yet broths made from them, with the admixture of vegetables, instead of putrefying, turn sour. Sir John Pringle has found, that animal flesh in substance, beaten up with bread or other farinaceous vegetables and a proper quantity of water, into the consistence of a pap, and kept in a heat equal to that of the human body, grows in a little time sour; while the vegetable matters, without the flesh suffer no such change.

It was observed in the preceding section, that some few vegetables in the resolution of them by fire, discover some agreement, in their matter, with bodies of the animal kingdom; yielding a volatile alkaline salt in considerable quantity, with little or no acid, or fixed alkali, which the generality of vegetables afford. In animal substances also, there are some exceptions to the general analysis; from animal fats, as we before observed, instead of a volatile alkali, an acid liquor is obtained; and their empyreumatic oil wants the peculiar offensiveness of the other animal-oils.

S E C T. III.

M I N E R A L S.

I. OILS and BITUMENS.

IN the mineral kingdom is found a fluid oil called *naphtha* or *petroleum*, floating on the surface of waters, or issuing from clefts of rocks, particularly in the eastern countries, of a strong smell very different from that of vegetable or animal oils, almost as limpid as water, highly inflammable, not soluble in spirit of wine, and more averse to union with water than any other oils.

There are different sorts of these mineral oils, more or less tinged, of a more or less agreeable, and a stronger or weaker smell. By the admixture of concentrated acids, which raise no great heat or conflict with them, they become thick, and at length consistent; and in their states are called *bitumens*.

These thickened or concreted oils, like the corresponding products of the vegetable kingdom, are generally soluble in spirit of wine, but much more difficultly, more sparingly, and for the most part only partially; they liquefy by heat, but require the heat to be considerably stronger than vegetable products. Their smells are various; but all of them, either in the natural state, when melted or set on fire, yield a peculiar kind of strong scent, called from them *bituminous*.

The solid bitumens are, amber, jet, asphaltum, or bitumen of Judea, and fossil or pit coal. All these bitumens when distilled, give out an odorous phlegm, or water, more or less coloured and saline; an acid, frequently in a concrete state; an oil, at first resembling the native petroleum, but soon becoming heavier and thicker; and lastly, a quantity of volatile alkali is obtained; the residuum is a charry matter, differing in its appearances according to the nature of the bitumen which had been analysed.

From the observations of several naturalists, it is probable that all bitumens are of vegetable and animal origin; that the circumstances by which they differ from the resinous and other oily matters of vegetables and animals, are the natural effects of time, or of an alteration produced on them by mineral acids; or perhaps they are the effect of both these causes combined. This opinion is the more probable, since bitumens, on a chemical analysis, yield oil and volatile alkali; neither of which are found in any other minerals.

II. EARTHS.

Under the mineral earths are included stones; these being no other than earths in an indurated state.—The different kinds of these bodies hitherto taken notice of, are the following.

I. *Earths soluble in the nitrous, muriatic, and vegetable acids, but not at all or exceedingly sparingly in the vitriolic acid. When previously dissolved in other acids, they are precipitated by the addition of this last, which thus unites*

unites with them into inspid, or nearly inspid concretes, scarcely, or sometimes not soluble in water.

Of this kind are :

1. The mineral calcareous earth : *distinguished by its being convertible in a strong fire without addition, into an acrimonious calx called quicklime.* This earth occurs in a variety of forms in the mineral kingdom. The fine soft chalk, the coarser lime-stones, the hard marbles, the transpa- rent spars, the earthy matter contained in waters, and which separating from them, incrustates the sides of the caverns, or hangs like isficles from the top, receiving from its different appearances different appellations. How strongly soever some of these bodies have been recommended for particular medicinal purposes, they are only fundamentally different forms of this calcareous earth ; simple pulverisation depriving them of the superficial characters by which they were distinguished in the mass. Most of them generally contain a greater or less admixture of some of the indissoluble kinds of earths ; which, however, affects their medicinal qualities no otherwise than by the addition which it makes to their bulk. Chalk appears to be one of the purest ; and is therefore in general preferred. They all burn into a strong quicklime : in this state a part of them dissolves in water, which thus becomes impregnated with the as- tringent and lithontriptic powers that have been erroneously ascribed to some of the earths in their natural state.

During the calcination of calcareous earths, a large quantity of elastic vapour is discharged : the absence of this fluid is the cause of the causticity of quicklime, and of its solubility in water in the form of lime-water. For a more full account of this subject, see the articles **FIXED AIR, LIME-WATER, and CAUSTIC LYE.**

2. The animal calcareous earth : *burning into quicklime like the mineral.* Of this kind are oyster-shells, and all the marine shells that have been examined ; though with some variation in the strength of the quicklime produced from them.

3. Ponderous earth, called also Barytes ; *distinguishable from the former by superior specific gravity, being about twice the weight of an equal bulk of Lime.* The nature of this kind of earth has not been long known, and it was not received into the list of the materia medica till the last edition of the Edinburgh pharmacopœia. For its peculiarities and habitudes see the article **BARYTES.**

II. Earths soluble with ease in the vitriolic as well as other acids, and yielding, in all other combinations therewith, saline concretes soluble in water.

1. *Magnesia alba : composing with the vitriolic acid a bitter purgative salt.* This earth has not yet been found naturally in a pure state. It is obtained from the purging mineral waters and their salts ; from the bitter liquor which remains after the crystallisation of sea-salt from sea-water ; from the fluid which remains uncrystallised in the putrefaction of some sorts of rough nitre. It also occurs in mixture with other earths, in different stones, as in sope rock and others.

2. *Aluminous earth : composing with the vitriolic acid a very astrigent salt.* This earth has been seldom found naturally pure. It is obtained from

from alum; which is no other than a combination of it with the vitriolic acid.

III. Earths which by digestion with acids are not at all dissolved.

1. Crystalline earths: *naturally hard, so as to strike fire with steel, becoming friable in a strong fire.* Of this kind are flints, crystals, &c. which appear to consist of one and the same earth, differing in the purity, hardness, and transparency of the mass.

2. Talky earth: *not striking fire with steel, and scarcely alterable by a vehement fire.* The masses of this earth are generally of a fibrous or leafy texture; more or less pellucid, bright or glittering, smooth and unctuous to the touch: too flexible and elastic to be easily pulverised; and soft, so as to be cut with a knife.

III. METALS.

OF metals, the next division of mineral bodies, the most obvious characters are, their peculiar brightness, perfect opacity, and great weight; the lightest of them is seven, and the heaviest upwards of nineteen times heavier than an equal bulk of water.

To understand the writers in chemistry, it is proper to be informed that metals are divided into the *perfect*, the *imperfect*, and the *semi-metals*.

Those possessed of ductility and malleability, and which are not sensibly altered by very violent degrees of heat, are called *perfect metals*: Of these there are three: gold, silver, and platina. It is, however, probable, that the mark of their indestructibility by fire is only relative: and indeed, modern chemists have been able, by a very intense degree of heat to bring gold into the state of a *calx*, or something very nearly resembling it.

Those metallic substances which possess the distinctive properties of the perfect metals, but in a less degree, are called the *imperfect metals*: These are, copper, iron, tin, and lead.

Lastly, those bodies having the metallic characters in the most imperfect state, that is to say, those which have no ductility and the least fixity in the fire, are distinguished by the name of *semi-metals*: These are, antimony, bismuth, zinc, cobalt, nickel, manganese, and arsenic; which last might be rather considered as the boundary between the metallic and the saline bodies.

Mercury has been generally ranked in a class by itself.

All metallic bodies, when heated in close vessels, melt or *fuse*. This does not appear that this process produces any change in the metals, provided it be conducted in close vessels. Metals, exposed to the combined action of air and fire, are converted into earth-like substances called *calces*: by this process, called *calcination*, the metal suffers remarkable changes. From the distinctive marks we have before given of the metallic bodies, it will be obvious, that the perfect metals are most slowly, the imperfect more quickly, and the semi-metals most easily and soonest,

soonest, affected in this operation. This earth-like powder, or *calx*, is found to possess no metallic aspect, but is considerably heavier than the metal before its calcination: it has no longer any affinity with metallic bodies, nor even with the metal from which it has been produced.

Besides this method of calcining metals by air and fire, they may likewise be brought into the state of a *calx*, by dissolving them in acids, from which they may be afterwards freed by evaporating the acid, or by adding to the solution an alkaline salt. Metals may be also calcined by detonation with nitre. This change in their obvious properties is generally accompanied with a remarkable alteration in their medicinal virtues: thus quicksilver, taken into the body in its crude state and undivided, seems inactive, but proves, when calcined by fire, even in small doses, a strong emetic and cathartic, and in smaller ones, a powerful alterative in chronic disorders; while regulus of antimony, on the contrary, is changed by the same treatment, from a high degree of virulence to a state of inactivity.

Calces of mercury and arsenic exhale in a heat below ignition: those of lead and bismuth, in a red or low white heat run into a transparent glass; the others are not at all vitrescible, or not without extreme vehemence of fire. Both the calces and glasses recover their metallic form and qualities again by the skilful addition of some inflammable substance. This recovery of the metallic calces into the metallic form is called *reduction*. During this process an elastic aerial fluid escapes, which is found to be *pure air*, either in a separate state, or combined with the inflammable substances added to reduce the *calx*.

The conversion of metals into calces is owing to the absorption of pure air; and the reduction to the extrication of pure air.

All metallic bodies dissolve in acids; some only in particular acids, some only in compositions of acids, as gold in a mixture of the vitrous and marine; and others, in all acids. Most of them are more soluble in acids in the form of *calx*, than in their pure metallic form. Some likewise dissolve in alkaline liquors, as copper; and others, as lead, in expressed oils. Fused with a composition of sulphur and fixed alkaline salt, most of them are soluble in water.

All metallic substances, dissolved in saline liquors, have powerful effects in the human body, though many of them appear in their pure state to be inactive. Their activity is generally in proportion to the quantity of acid combined with them: Thus lead, which in its crude form has no sensible effect, when united with a small portion of vegetable acid into cerus, discovers a low degree of the styptic and malignant quality, which it so strongly exerts when blended with a larger quantity of the same acid in what was called *saccharum saturni*, but now more properly *plumbum acetatum*: and thus mercury, with a certain quantity of the muriatic acid, forms the violent corrosive sublimate, which by diminishing the proportion of acid, becomes the milder medicine called *mercurius dulcis*.

IV. ACIDS.

The acids of this order are very numerous; but as we are at present treating of *Minerals*, we shall therefore confine ourselves to the *mineral* or *fossil* acids.

These are distinguished by the names of the concretes from which they have been principally extracted; *vitriolic* from vitriol, the *nitrous* from nitre or saltpetre; and the *marine* or *muratic* from common sea-salt. They are generally in the form of a watery fluid: They have all a remarkable attraction for water, and imbibe the humidity of the air with rapidity and the generation of heat. Although heat be produced by their union with water, yet when mixed with ice in a certain manner, they generate a great degree of cold. Acids change the purple and blue colours of vegetables to a red: they resist fermentation; and lastly, they impress that peculiar sensation on the tongue called *Sourness*, and which their name imports. But it is to be observed, that they are all highly corrosive, inasmuch as not to be safely touched, unless largely diluted with water, or united with such substances as obtund or suppress their acidity. Mixed hastily with vinous spirits, they raise a violent ebullition and heat, accompanied with a copious discharge of noxious fumes: a part of the acid unites intimately with the vinous spirit into a new compound, void of acidity, called *dulcified spirit* or *Ether*. It is observable, that the muratic acid is much less disposed to this union with spirit of wine than either of the other two; nevertheless, many of the compound salts resulting from the combination of earthy and metallic bodies with this acid, are soluble in spirit, while those with the other acids are not. All these acids effervesce strongly with mild alkaline salts both fixed and volatile; and form with them neutral salts; that is, such as discover no marks either of an acid or alkaline quality.

The nitrous and muratic acids are obtained in the form of a thin liquor: the acid part being blended with a large proportion of water, without which it would be diffused into an incoercible vapour: the vitriolic stands in need of so much less water for its condensation as to assume commonly an oily consistence (whence its former name, *oil of vitriol*), and in some circumstances even a solid one. Alkaline salts, and the soluble earths and metals, absorb from the acid liquors only the pure acid part: so that the water may now be evaporated by heat, and the compound salt left in a dry form.

From the coalition of the different acids with the three different alkalies, and with the several soluble earths and metallic bodies, result a variety of saline compounds: the principal of which shall be particularised in the sequel of this work.

The vitriolic acid, in its concentrated liquid state, is much more ponderous than the other two; it emits no visible vapour in the heat of the atmosphere, but imbibes moisture which increases its weight: the nitrous and muratic emit copious corrosive fumes; the nitrous yellowish red, and the muratic white ones. If bottles containing the three acids be stopp'd with cork, the cork is tinged black with the vitriolic, corroded into a yellow substance by the nitrous, and into a whitish one by the muratic.

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It is above laid down as a character of one of the classes of earths, that the vitriolic acid precipitates them when they are previously dissolved in any other acid: it is obvious that on the same principle this particular acid may be distinguished from all others. This character serves not only for the acid in its pure state, but likewise for all its combinations that are soluble in water. If a solution of any compound salt, whose acid is the vitriolic, be added to a solution of chalk in any other acid, the vitriolic acid will part from the substance with which it was before combined, and join itself to the chalk, forming therewith a compound; which, being no longer soluble in the liquor, renders the whole milky at first, but by standing a short while the new compound gradually subsides. The same phenomenon occurs in a much more evident manner if, instead of a solution of chalk, we use a solution of Barytes.

The nitrous acid also, with whatever kind of body it be combined, is both distinguished and extricated if any inflammable substance be brought to a state of ignition with it. If the subject be mixed with a little powdered charcoal and made red hot, a deflagration or fulmination ensues; that is, a bright flame with a hissing noise; and the inflammable matter and the acid being thus consumed or dissipated together, there remains only the substance which was before combined with the acid, and the small quantity of ashes afforded by the coal.

This property of the nitrous acid deflagrating with inflammable substances serves not only as a criterion of the acid in various forms and disguises, but likewise for discovering inflammable matter in bodies, when its quantity is too small to be sensible on other trials.

All these acids will be more particularly examined when we come to treat of each of them apart. There are, however, a few other mineral acids which are of importance to be known; these are *aqua regia*; *acid of borax*; *sparry acid*; and lastly *fixed air*, which has of late been called *aerial acid*, *acid of chalk*, and *carbonic acid*.

Aqua regia has been generally prepared by a mixture of certain proportions of the nitrous and muriatic acids. It is of little avail in pharmacy whether we consider it as a distinct acid, or only as a modification of the muriatic. It has been found, that the muriatic acid when distilled with *manganese*, suffers a change which renders it capable of dissolving gold and platina; this change is produced by the acid acquiring a redundancy of pure air. This experiment, however, renders it probable, that the nitrous acid in the common *aqua regia*, is only subservient to accomplishing the same change in the muriatic acid, which is produced by distilling that acid with *manganese*.

As *aqua regia* has been only used in the nicer operations in chemistry, and in the art of assaying, we think it unnecessary to say more of it in this place.

The *acid of borax*, or *sedative salt of Homberg*, may be extracted from borax, a neutral salt, whose base is mineral alkali. It has also been found native in the waters of several lakes in Tuscany. It is a light, crystallized concrete salt: its taste is sensibly acid; it is difficultly soluble in water; but the solution changes blue vegetable colours to a red. With vitrescent earths, it fuses into a white glass: it unites with the other

other alkalies, with magnesia, and with quicklime. The salts resulting from these combinations are very imperfectly known. The salt has been called *sedative*, from its supposed virtues as an anodyne and refrigerant remedy; but modern physicians have very little faith in this once celebrated drug.

The *sparry acid* is so called, from its being extracted from a fossil called *sparry fluor*, or *vitreous spar*. As it has not yet been employed for any purpose in pharmacy, we think it would be improper to attempt any farther account of it here.

Besides the acids above mentioned, there have also been discovered acids seemingly of a peculiar nature, in amber, in arsenic, and other minerals: but as these have not hitherto been applied to any use in pharmacy, they cannot properly have a place in this work.

We now come to the last, but perhaps the most generally diffused, acid in nature: this is the aerial acid, or

Fixed Air.

In our pharmaceutical history of this body, we shall only use the name *fixed air* originally given to it by its inventor Dr Black. It has received many different names, according to the substances from which it is disengaged, and to the different opinions concerning its nature: it is the *gas silvestre* of Helmont, the *acid of chalk*, *calcareous gas*, *mephitic gas*, *mephitic acid*, *aërial acid*, and *carbonic acid*, of modern chemists. In accommodating our account of it to the purposes of pharmacy, it is most convenient to consider it as an acid. It may be extricated by heat, or by other acids, from all calcareous earths; that is, from all those earths which by calcination are converted into quicklime; such as chalks, marble, limestone, sea-shells, &c. It is likewise extricated from mild, fixed, and volatile alkalies, and from magnesia. Thus, if the vitriolic, or almost any other acid, be added to a quantity of calcareous earth or mild alkali, a brisk effervescence immediately ensues; the fixed air is discharged in bubbles: and the other acid takes its place. If this process be conducted with an apparatus to be afterwards described, the fixed air separated from the calcareous earth, may be received and preserved in close vessels. When thus disengaged it assumes its real character, viz. that of a *permanently elastic fluid*. Fixed air is also separated in great quantity during the vinous fermentation of vegetable matters. When a calcareous earth is deprived of this acid by heat, it is converted into the caustic substance *quicklime*. When alkalies, fixed or volatile, are deprived of it, they are rendered caustic, incapable of crystallisation, or of effervescing with other acids. They are also in this *deærated* state much more powerful in dissolving other bodies. By recombining this acid with quicklime, calcined magnesia, or caustic alkali, these substances again assume their former weight and properties. When these bodies are combined with fixed air they are called *mild*; as *mild calcareous earth*, *mild alkali*, &c. And when deprived of this acid, they are called *caustic*; as *caustic calcareous earth*, *caustic alkali*, &c. But as magnesia is not rendered caustic by calcination, it would perhaps be more proper to call them *aërated* and *deærated*.

posed

posed to unite with barytes and calcareous earth than with any other substance; next to these it has the strongest attraction for fixed alkali, then for magnesia, and lastly for volatile alkali. We shall afterwards find that these relative powers of the different substances to unite with it lay the foundation of many important processes in pharmacy.

When we pour a small quantity of this acid into lime-water, the liquor instantly assumes a white colour, and the lime gradually precipitates, leaving the water clear and tasteless: the lime in this experiment absorbed the acid, and has therefore become *mild* or *aërated* calcareous earth. This acid is capable of being absorbed by water; and the water thus impregnated, precipitates lime into lime-water: but if a certain larger quantity of this impregnated water be added, the lime is redissolved, and the liquor recovers its transparency. Water impregnated with it is capable of dissolving iron; and in this way are formed native and artificial chalybeate waters. Zinc is also soluble in the same liquor. This acid is easily expelled from the water by boiling, and even by time alone, if the vessel be not kept close shut. Fixed air extinguishes flame and animal life, and ought therefore to be cautiously managed: like other acids, it changes the blue colours of vegetables to a red, and communicates an acidulous taste to the water impregnated with it.

From these several facts, it will appear obvious, that *mild* or *effervescent alkalies*, whether fixed or volatile, are really neutral salts, compounded of this acid and pure alkali: like other acids it unites with these bodies, diminishes their causticity, and effects their crystallisation. In speaking, therefore, of *pure alkali*, we ought to confine ourselves to those in the *caustic* or *de-aërated* state. Many other properties of this acid might be mentioned, but we have noticed all those which we thought were concerned in the business of pharmacy. We shall have occasion to recur to the subject when we come to the preparation of several compound drugs.

Let us next take a view of what passes in the combinations of acids with different substances.

If a fixed alkaline salt be united with a vegetable acid, as vinegar, and formed into a neutral salt, on adding to this compound some murietic acid, the acetous acid will be disengaged, so as to exhale totally in a moderate heat, leaving the muriatic in possession of the alkali: the addition of the nitrous will in like manner dispossess the muriatic, which now arises in its proper white fumes, though without such an addition it could not be extricated from the alkali by any degree of heat; on the addition of the vitriolic acid, the nitrous gives way in its turn, exhaling in red fumes, and leaving only the vitriolic acid and the alkali united together.

Again, if any metallic body be dissolved in an acid, the addition of any earthy body that is dissoluble in that acid will precipitate the metal: a volatile alkaline salt will in like manner precipitate the earth: a fixed alkali will dissolve the volatile: and the remaining salt will be the same as if the acid and fixed alkali had been joined together at first, without the intervention of any of the other bodies.

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The power of bodies, on which these various transpositions and combinations depend, is called by the chemists *affinity* or *elective attraction*; a term, like the Newtonian *attraction*, designed not to express the cause, but the effect. When an acid spontaneously quits a metal to unite with an alkali, they say it *has a greater attraction* for the alkali than for the metal: and when on the contrary, they say it has a greater attraction for fixed alkali than for the volatile, they mean only that it will unite with the fixed in preference to the volatile; and that if previously united with a volatile alkali, it will forsake this for a fixed one.

The doctrine of the attractions of bodies is of a very extensive use in chemical pharmacy: many of the official processes, as we shall see hereafter, are founded on it: several of the preparations turn out very different from what would be expected by a person unacquainted with these properties of bodies; and if any of them, from an error in the process, or other causes, prove unfit for the use intended, they may be rendered applicable to other purposes, by such transpositions of their component parts as are pointed out by the knowledge of their attractions.

We shall therefore subjoin a table of the principal attractions observed in pharmaceutical operations, formed from that of the famous Bergman.

The table is to be thus understood. The substance printed in capital on the top of each series, has the greatest attraction for that immediately under it, a less attraction for the next, and so on to the end of the series: that is, if any of the remote bodies has been combined with the top one, the addition of any of the intermediate bodies will disunite them; the intermediate body uniting with the uppermost body of the series, and throwing out the remote one. Thus, in the first column of the vitriolic acid, a fixed alkali being placed between the acid and iron, it is to be concluded, that wherever vitriolic acid and iron are mixed together, the addition of any fixed alkaline salt will unite with the acid, and occasion the iron to be separated. Where several substances are expressed in one series, it is to be understood, that any of those bodies which are nearer to the uppermost, will in like manner disengage from it any of those which are more remote.

TABLE

Cha

Vir

Bar

Veg

Foss

Lime

Magn

Vol

Clas

Zinc

Iron

Lead

Tin

Copper

Antimony

Arsenic

Mercury

Silver

Gold

Waxes

Al

Ve

Foss

Bar

Lime

Magn

Vol

Clas

TABLE OF SINGLE ATTRACTIONS.

BY WATER.

VITRIOLIC ACID.	NITROUS ACID.	MURIATIC ACID.	AQUA REGIA.
Barytes, Vegetable alkali, Fossil alkali, Lime, Magnesia. Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alcohol.	Vegetable alkali, Fossil alkali, Barytes, Lime, Magnesia, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alcohol.	Vegetable alkali, Fossil alkali, Barytes, Lime, Magnesia, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alcohol.	Vegetable alkali, Fossil alkali, Barytes, Lime, Magnesia, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alcohol.

BY FIRE.

Vegetable alkali, Fossil alkali, Barytes, Lime, Magnesia, Metals, Volatile alkali, Clay.	Barytes, Vegetable alkali, Fossil alkali, Lime, Magnesia, Metals, Volatile alkali, Clay.	Barytes, Vegetable alkali, Fossil alkali, Lime, Magnesia, Metals, Volatile alkali, Clay.
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TABLE

TABLE of SINGLE ATTRACTIONS *continued*.

BY WATER.

ACID OF BORAX.	ACID OF SUGAR.	ACID OF TAR-TAR.	ACID OF SORREL.
Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alkohol.	Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alkohol.	Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alkohol.	Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alkohol.

BY FIRE.

Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Metals, Volatile alkali, Clay.		
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TABLE

TABLE of SINGLE ATTRACTIONS *continued.*

BY WATER.

ACID OF LEMON.	ACETOUS ACID.	ACID OF PHOSPHORUS.	AERIAL ACID.
Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alkohol.	Barytes, Vegetable alkali, Fossil alkali, Volatile alkali, Lime, Magnesia, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water, Alkohol.	Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water.	Barytes, Lime, Vegetable alkali, Fossil alkali, Magnesia, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Arsenic, Mercury, Silver, Gold, Water.

BY FIRE.

Barytes, Vegetable alkali, Fossil alkali, Lime, Magnesia, Metals, Volatile alkali, Clay.	Lime, Barytes, Magnesia, Vegetable alkali, Fossil alkali, Metals, Volatile alkali, Clay.
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TABLE

TABLE of SINGLE ATTRACTIONS continued.

By WATER.

VEGETABLE AL- KALI.	FOSSIL ALKALI.	VOLATILE AL- KALI.	BARYTES.
Vitriolic acid, Nitrous acid, Muriatic acid, Phosphoric acid, Acid of fugar, Acid of tartar, Acid of forrel, Acid of lemon, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid, Water, Unctuous oils, Sulphur, Metals.	Vitriolic acid, Nitrous acid, Muriatic acid, Phosphoric acid, Acid of fugar, Acid of tartar, Acid of forrel, Acid of lemon, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid, Water, Unctuous oils, Sulphur, Metals.	Vitriolic acid, Nitrous acid, Muriatic acid, Phosphoric acid, Acid of fugar, Acid of tartar, Acid of forrel, Acid of lemon, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid, Water, Unctuous oils, Sulphur, Metals.	Vitriolic acid, Acid of fugar, Acid of forrel, Phosphoric acid, Nitrous acid, Muriatic acid, Acid of lemon, Acid of tartar, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid, Water, Unctuous oils, Sulphur.

By FIRE.

Phosphoric acid, Acid of borax. Vitriolic acid, Nitrous acid, Muriatic acid, Acetous acid, Barytes, Lime, Magnesia, Clay, Sulphur.	Phosphoric acid, Acid of borax, Vitriolic acid, Nitrous acid, Muriatic acid, Acetous acid, Barytes, Lime, Magnesia, Clay, Sulphur.	Vitriolic acid, Nitrous acid, Muriatic acid, Acetous acid, Barytes, Lime, Magnesia, Clay, Sulphur.	Phosphoric acid, Acid of borax, Vitriolic acid, Nitrous acid, Muriatic acid, Acid of benzoïn, Acetous acid, Fixed alkali, Sulphur, Lead.
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TABLE

TABLE OF SINGLE ATTRACTIONS *continued.*

BY WATER.

LIME.	MAGNESIA.	CLAY.	WATER.
Acid of sugar, Acid of sorrel, Vitriolic acid, Acid of tartar, Phosphoric acid, Nitrous acid, Muriatic acid, Acid of lemon, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid, Water, Unctuous oil, Sulphur.	Acid of sugar, Phosphoric acid, Vitriolic acid, Nitrous acid, Muriatic acid, Acid of sorrel, Acid of tartar, Acid of lemon, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid, Sulphur.	Vitriolic acid, Nitrous acid, Muriatic acid, Acid of sugar, Acid of sorrel, Acid of tartar, Acid of lemon, Acid of phosphorus, Acid of benzoïn, Acetous acid, Acid of borax, Aërial acid.	Vegetable alkali, Fossil alkali, Volatile alkali, Alkohol, Æther, Vitriolic acid, Vitriolated tartar, Alum, Green vitriol, Corrosive sublimate.

BY FIRE.

Phosphoric acid, Acid of borax, Vitriolic acid, Nitrous acid, Muriatic acid, Fixed alkali, Sulphur, Lead.	Phosphoric acid, Acid of borax, Vitriolic acid, Nitrous acid, Muriatic acid, Fixed alkali, Sulphur, Lead.	Phosphoric acid, Acid of borax, Vitriolic acid, Nitrous acid, Muriatic acid, Fixed alkali, Sulphur, Lead.
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TABLE

TABLE of SINGLE ATTRACTIONS *continued.*

BY WATER.

SULPHUR.	HEPAR SULPHURIS.	ALCOHOL.	ÆTHER.
Lead, Tin, Silver, Mercury, Arsenic, Antimony, Iron, Vegetable alkali, Volatile alkali, Barytes, Lime, Magnesia, Unctuous oils, Essential oils, Æther, Alcohol.	Gold, Silver, Mercury, Arsenic, Antimony, Copper, Tin, Lead, Iron, Alcohol, Water.	Water, Æther, Essential oils, Volatile alkali, Fixed alkali, Hepar sulphuris, Sulphur.	Alcohol, Essential oils, Expressed oils, Water, Sulphur.

BY FIRE.

Fixed alkali, Iron, Copper, Tin, Lead, Silver, Antimony, Mercury, Arsenic.	Iron, Copper, Tin, Lead, Silver, Antimony, Mercury, Arsenic.	
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TABLE OF SINGLE ATTRACTIONS *continued.*

BY WATER.

ESSENTIAL OILS	EXPRESSED OILS.	GOLD.	SILVER.
Ether, Alcohol, Expressed oils, Fixed alkali, Sulphur.	Ether, Essential oils, Fixed alkali, Volatile alkali, Sulphur.	Ether, Muriatic acid, Aqua regia, Nitrous acid, Vitriolic acid, Acid of tartar, Phosphoric acid, Fixed alkali, Volatile alkali.	Muriatic acid, Acid of fugar, Vitriolic acid, Phosphoric acid, Nitrous acid, Acid of tartar, Acid of forrel, Acid of lemon, Acetous acid, Aërial acid, Volatile alkali.

BY FIRE.

	Mercury, Copper, Silver, Lead, Tin, Antimony, Iron, Zinc, Arsenic, Hepar sulphuris.	Lead, Copper, Mercury, Tin, Gold, Antimony, Iron, Zinc, Arsenic, Hepar sulphuris, Sulphur.
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TABLE

TABLE of SINGLE ATTRACTIONS continued.

BY WATER.

MERCURY.	LEAD.	IRON.	COPPER.
Muriatic acid, Acid of sugar, Phosphoric acid, Vitriolic acid, Acid of tartar, Acid of lemon, Nitrous acid, Acetous acid, Acid of borax, Ærial acid.	Vitriolic acid, Acid of sugar, Acid of tartar, Phosphoric acid, Acid of forrel, Muriatic acid, Nitrous acid, Acid of lemon, Acetous acid, Acid of borax, Ærial acid. Fixed alkali.	Acid of sugar, Acid of tartar, Vitriolic acid, Muriatic acid, Nitrous acid, Phosphoric acid, Acid of forrel, Acid of lemon, Acetous acid, Acid of borax, Ærial acid.	Acid of sugar, Acid of tartar, Muriatic acid, Vitriolic acid, Nitrous acid, Phosphoric acid, Acid of forrel, Acid of lemon, Acetous acid, Acid of borax, Ærial acid, Fixed alkali, Volatile alkali, Expressed oils.

BY FIRE.

Gold, Silver, Lead, Tin, Zinc, Copper, Antimony, Arsenic, Iron, Hepar sulphuris, Sulphur.	Gold, Silver, Copper, Mercury, Tin, Antimony, Arsenic, Zinc, Iron, Hepar sulphuris, Sulphur.	Arsenic, Copper, Gold, Silver, Tin, Antimony, Lead, Mercury, Hepar sulphuris, Sulphur.	Gold, Silver, Arsenic, Iron, Zinc, Antimony, Tin, Lead, Mercury, Hepar sulphuris, Sulphur.
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TABLE

TABLE OF SINGLE ATTRACTIONS *continued.*

By WATER.

TIN.	ARSENIC.	ZINC.	ANTIMONY.
Acid of tartar, Muriatic acid, Vitriolic acid, Acid of sugar, Phosphoric acid, Nitrous acid, Acid of forrel, Acid of lemon, Acetous acid, Acid of borax, Fixed alkali, Volatile alkali.	Muriatic acid, Acid of sugar, Vitriolic acid, Nitrous acid, Acid of tartar, Phosphoric acid, Acid of forrel, Acid of lemon, Acetous acid, Volatile alkali, Unctuous oils.	Acid of sugar, Vitriolic acid, Muriatic acid, Nitrous acid, Acid of forrel, Acid of tartar, Phosphoric acid, Acid of lemon, Acetous acid, Acid of borax, Acid of borax, Aërial acid, Volatile alkali.	Muriatic acid, Acid of sugar, Vitriolic acid, Nitrous acid, Acid of tartar, Acid of forrel, Phosphoric acid, Acid of lemon, Acetous acid, Acid of borax, Aërial acid.

By FIRE.

Zinc, Mercury, Copper, Antimony, Gold, Silver, Lead, Iron, Arsenic, Hepar sulphuris, Sulphur.	Copper, Iron, Silver, Tin, Lead, Gold, Zinc, Antimony, Hepar sulphuris, Sulphur.	Copper, Antimony, Tin, Mercury, Silver, Gold, Arsenic, Lead, Iron.	Iron, Copper, Tin, Lead, Silver, Zinc, Gold, Mercury, Arsenic, Hepar sulphuris, Sulphur.
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TABLE

CASES of DOUBLE ELECTIVE ATTRACTIONS.

By WATER.

1. Epfom falt with Mild vegetable alkali,	Give	1. Vitriolated tartar and Common magnesia.
2. Vitriolic Ammoniac with Mild mineral alkali,		2. Mild volatile alkali and Glauber's falt.
3. Vitriolated tartar with Nitrous felenite,		3. Saltpetre and Vitriolic felenite.
4. Vitriolated tartar with Mercurial nitre,		4. Saltpetre and Vitriol of mercury.
5. Saltpetre with Luna cornea,		5. Cubic nitre and Lunar caustic.
6. Vitriolated tartar with Luna cornea,		6. Febrifugal falt and Vitriol of filver.
7. Acetated tartar with Mercurial nitre,		7. Saltpetre and Acetous mercurial falt.

By HEAT.

1. Vitriolic ammoniac with Common falt,	Give	1. Common fal ammoniac and Glauber's falt.
2. Vitriolic ammoniac, with Acetated water,		2. Acetous ammoniacal falt and Vitriolated tartar.
3. Vitriol of mercury with Common falt,		3. Corrofive fublimated and Glauber's falt.
4. Crude antimony with Corrofive fublimated,		4. Butter of antimony and Cinnabar.

C H A P.

CHAPTER II.

Of the Pharmaceutical Apparatus.

ONE of the principal parts of the pharmaceutic apparatus consists in contrivances for containing and applying fire, and for directing and regulating its power. Of these contrivances called *furnaces*, there are different kinds, according to the convenience of the place, and the particular purposes they are intended to answer. We shall here endeavour to give a general idea of their structure, and of the principles on which they are built.

FURNACES.

THE most simple furnace is the common stove, otherwise called the furnace for OPEN FIRE. This is usually made of an iron hoop, five or six inches deep; with a grate or some iron bars across the bottom, for supporting the fuel. The following construction however is the most convenient. Fig. 1. Plate 1. It is a cylinder of plate iron about 10 or 12 inches long and about 8 or 9 in diameter, open at the top and close below, and is supported by 4 feet. At G, about four inches from the bottom, a grate is placed, the plan of which is represented at C. Below the grate is the ash-pit with its door D for the admission of air and taking out the ashes. This furnace is designed for such operations as require only a moderate heat; as infusion, decoction, and the evaporation of liquids. The vessel, containing the subject matter, is supported over the fire by a trevet, or by some bars laid over the top of the furnace.

A similar cylinder, lined with such materials as are capable of sustaining a strong fire; with a grate and ash pit beneath, as in the preceding; and a conical dome at the top with a perpendicular pipe, or chimney; makes a WIND FURNACE. Fig. 2.

The greater the perpendicular height of the chimney, the greater will be the draught of air through the furnace, and the more intensely will the fire burn; provided the width of the chimney is sufficient to allow a free passage to all the air that the furnace can receive through the grate; for which purpose the area of the aperture of the chimney should be half the area of the grate.

As the intensity of the fire depends wholly upon the quantity of air successively passing through and animating the burning fuel, it is obvious, that the most vehement fire may be suppressed or restrained at pleasure, by closing more or less either the ash pit door by which the air is admitted, or the chimney by which it passes off; and that the fire may be more or less raised again, by more or less opening those passages. A moveable plate, or REGISTER, in any convenient part of the chimney, affords commodious means of varying the width of the passage, and consequently of regulating the heat. But the heat is most conveniently regulated by keeping the ash-pit door entirely shut

shut, and having a range of holes of different sizes provided with proper pins, whereby we may admit as much air as we please. These holes may be made to bear a certain proportion to each other; the smallest being considered as one, the next to it in size must have twice the opening, the next to that double of the second, &c.; and so on to the number of seven or eight; and by combining these holes variously together, we can admit any quantity of air from 1 to 255; as 1. 2. 4. 8. 16. 32. 64. 128. See Fig. 2. E.

There are two general kinds of these wind-furnaces: one, with the chimney on the top, over the middle of the furnace, (fig. 2.); the other with the chimney on one side, and the mouth clear, (fig. 3.)

In the first, either the upper part of the furnace is contracted to such an aperture, that the chimney may fit upon it; or it is covered with an arched dome, or with a flat plate, having a like aperture in the middle. As in this disposition of the chimney, the inside of the furnace cannot be come at from above, a door is made in the side, a little above the grate, for supplying the fuel, inspecting the matter in the fire, &c. Fig. 2. F.

For performing FUSIONS in this furnace, the crucible or melting vessel, is placed immediately among the fuel, with a slip of a brick, or some other like support, between it and the grate, to keep the cold air, which enters underneath, from striking on its bottom.

When designed as a REVERBERATORY, that is for distillation in long-necked coated glass retorts, two iron bars are placed across above the fire, for supporting the vessel, whose neck comes out at an aperture made for that purpose in the side. This aperture should be made in the opposite side to the door above mentioned; or at least so remote from it, that the receiver fitted on the neck of the distilling vessel without the furnace, may not lie in the operator's way when he wants to stir the fire or throw in fresh fuel. Fig. 4.

When a furnace of this kind is designed only for a *sand bath*, it is most commodious to have the sand placed on a long iron plate, furnished with a ledge of free stone or brick work at each side. The mouth of the furnace is to be closely covered by one end of this plate; and the canal by which the furnace communicates with its chimney, is to be lengthened and carried along under the plate, the plate forming the upper side of the canal. In this kind of sand bath, digestions, &c. requiring different degrees of heat, may be carried on at once; for the heat decreases gradually from the end over the furnace to the other, Fig. 5.

When large vessels, as *still*s, are fixed in furnaces, a considerable part of the bottom of the vessel is commonly made to rest upon solid brick-work.

The large still, whose bottom is narrow in proportion to its height, and whose weight, when charged with liquor, requires great part of it to be thus supported, exposes but a small surface to the action of the fire underneath. To make up for this disadvantage, the heat, which rises at the further end of a long narrow grate, is conveyed all round the sides of the vessel by a spiral canal, which communicates at top with a common chimney.

The

The pots for distilling hartsorn and aquafortis in the larger way, have part of their great weight borne up by three strong pins or trunnions, at equal distances round the pot towards the middle, reaching in to a brick-work: so that less support being necessary underneath, a greater surface of the wide bottom lies exposed to the immediate action of the fire.

If a furnace, communicating with its chimney by a lateral canal, as in the sand furnace above-mentioned, be carried to a considerable height above the part where this canal enters it, and if it be filled with fuel to the top, and closely covered, the fuel will burn no higher than up to the upper side of the canal through which the air passes off; and in proportion as this lower part of the fuel consumes it will be supplied by that above, which falls down in its place. Hence in this furnace, called an *athanor*, a constant heat may be kept up for a considerable length of time without attendance. Fig. 6.

The tower of the athanor, or that part which receives the fuel, is commonly made to widen a little downwards, that the coals may fall the more freely; but not so much as that the part on fire at bottom may be too strongly pressed. A small aperture is made opposite to the canal or flue, or a number of openings according to the size of the furnace and the degree of heat required, for supplying the air which is more conveniently admitted in this manner than through the grate, as the interstices of the grate are in time choked up by the ashes.

This furnace is designed only for heating bodies exterior to it. Its canal or flue, as in the sand furnace already described, passes under a sand-bath or water-bath; at the farther end of which, it rises perpendicularly to such a height, as may occasion a sufficient draught of air through the fire.

The flue may be so wide as to correspond to the whole height of the fire-place. A register or sliding plate, placed between the flue and the furnace, enable us to increase or diminish this height, and consequently the quantity of fire, at pleasure. If the space beneath the flue be inclosed to the ground, the heat in this cavity will be considerable enough to be applicable to some useful purposes.

With regard to the materials of furnaces, the fixed ones are built of bricks, cemented together by some good loam or clay. Any kind of loam or clayey composition that is of a proper degree of tenacity, which when made into a paste with water and well worked, does not stick to the fingers, and which, when thoroughly dried, neither cracks nor melts in a vehement fire, is fit for this use. The purer and more tenacious clays require to have their tenacity lessened by an admixture of sand, or rather of the same kind of clay burnt and grossly powdered.

Smaller portable furnaces are made of strong iron and copper plates, lined, to the thickness of an inch or more, with the same kind of clayey composition.

Dr Black has contrived one of the most simple and elegant furnaces with which we are yet acquainted. Besides its durability, it will be found, though but one instrument, to answer all the purposes either of the practical or speculative chemist. Plate I. Fig. 7 and 8.

EXPLANATION of PLATE I.

Fig. 1. A common stove which stands on feet, and is moveable from place to place.

A, The body of the stove.

B, Its feet.

C, The grate, which is that used in Dr Black's furnace, to be afterwards described, and which we would recommend as the best for every kind of portable furnace.

Fig. 2. A wind-furnace.

A, Its dome.

B, The door for supplying fuel.

C, The chimney.

D, The door of the ash-pit.

E, The register, or damping plate.

Fig. 3. A similar furnace with its vent carried off to one side, or backward.

A, The beginning of its chimney from the back part.

B, The mouth of the furnace, serving as the door, and may be covered with a tile.

Fig. 4. Plan of a wind-furnace when designed for a reverberatory.

A, The iron bars, which cannot be shewn, but may very easily be conceived.

B, A retort supported on the bars.

C, The neck of the retort, coming out at an aperture of the furnace in the opposite side of the door.

Fig. 5. Plan of a wind-furnace when designed for a sand-bath.

A, A long iron plate, one end of which closely shuts the mouth of the furnace.

B, A ledge of free-stone or brick-work.

C, the mouth of the canal.

Registers, &c. as in the other furnaces.

Fig. 6. An athanor.

A, The tower which has a cover at the top B when used.

C, The fire-place.

D, The ash-pit.

E, E, An oblong frame of metal or stone connected with the tower A.

F, F, A chamber connected to the fire place C, and continued up to the chimney G. Above this chamber the rest of the frame is lined with iron.

H, H, A cavity for holding sand, which is heated by the long range of fire in the chamber below.

Fig. 7. and 8. Dr Black's furnace. To render our description of this instrument as simple as possible, let the reader suppose that the body of the common stove, Fig. 1 is made of an oval form, and closed at each end by a thick iron plate. The upper plate or end of this furnace is perforated with two holes: one of these, A, is pretty large, and is often the mouth



PLATE IN°1.

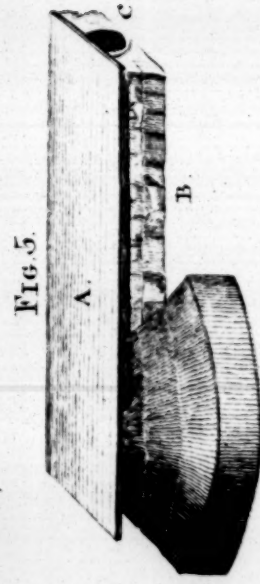
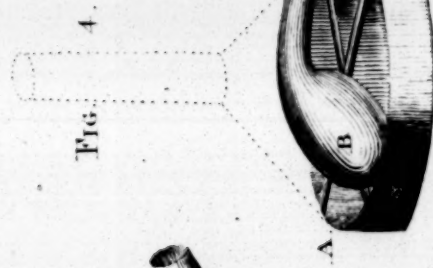
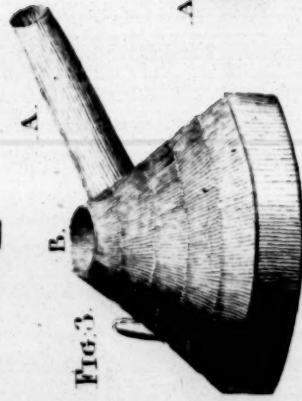
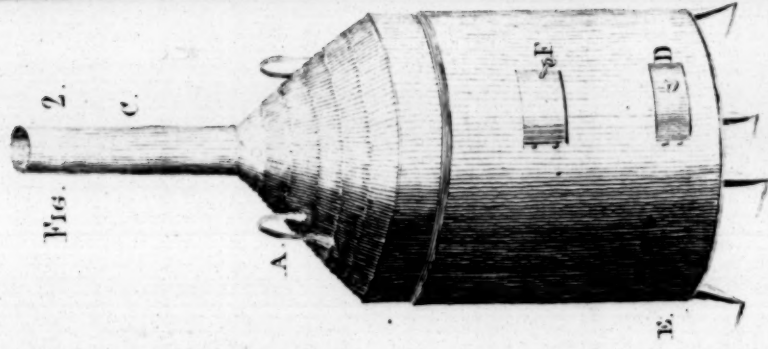
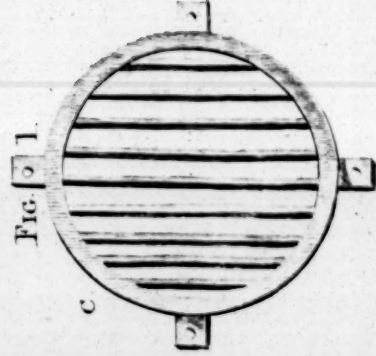
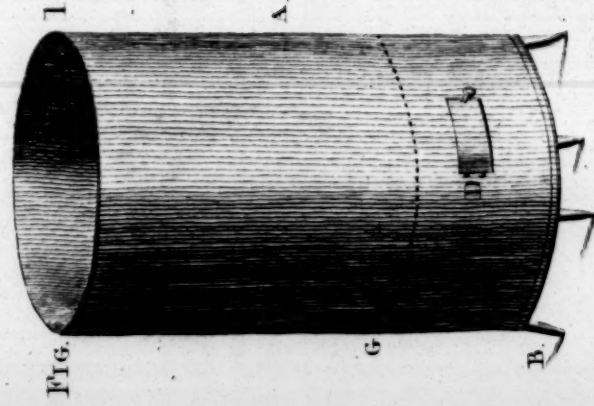


PLATE IN°2.

FIG. 6.

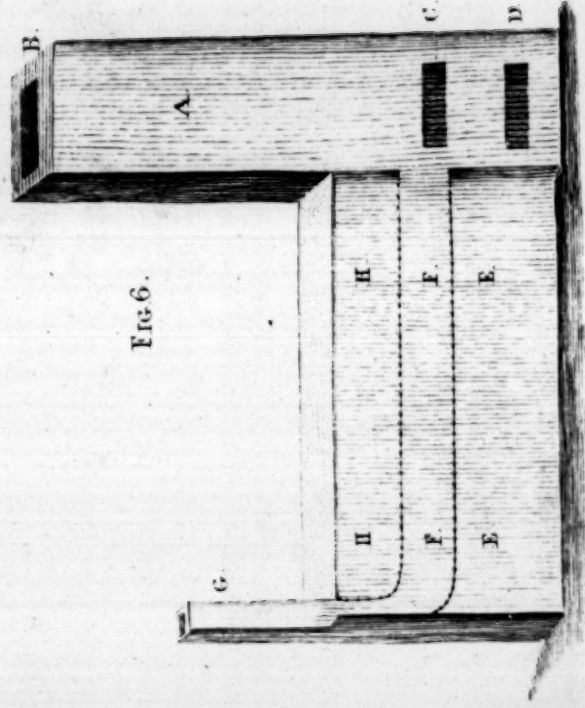


FIG. 7.

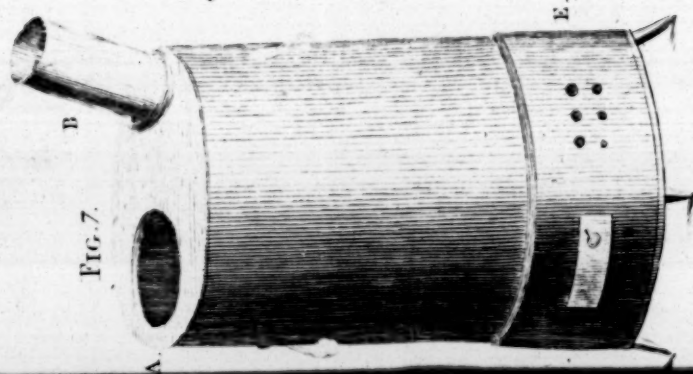


FIG. 8.

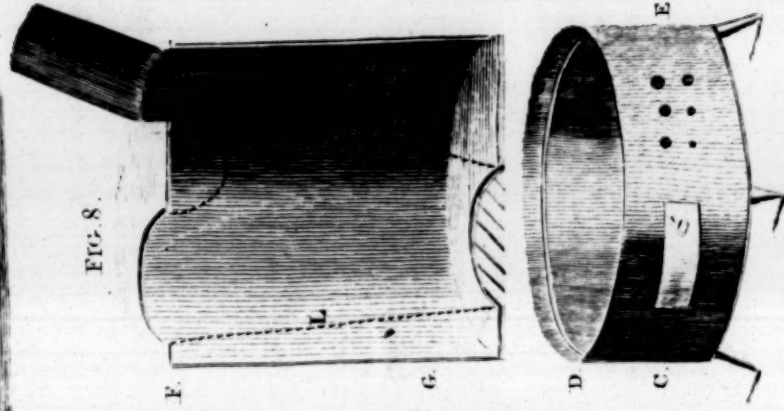


FIG. 9.

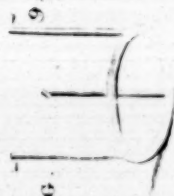


FIG. 10.





mouth of the furnace; the other hole, B, is intended for fixing the vent on.

The undermost plate or end of the furnace has only one circular hole, somewhat nearer to the end of the ellipse than the other; hence a line passing through the centre of both circular holes has a little obliquity forwards: this is shewn in fig. 8. which is a section of the body of the furnace, and exhibits one half of the upper and one half of the under nearly corresponding holes. The ash pit, fig. 7. and 8. C, is made of an elliptical form like the furnace; but is somewhat wider, so that the bottom of the furnace goes within the brim; and a little below there is a border, D, fig. 8. that receives the bottom of the furnace. Except the holes of the damping plate, E. fig. 7. and 8. the parts are all closed by means of a quantity of soft lute, upon which the body of the furnace is pressed down, whereby the joining is made quite tight: for it is to be observed, that in this furnace, the body, ash pit, vent, and grate, are all separate pieces, as the furnace comes from the hands of the workman. The grate C, fig. 1. is made to apply to the outside of the lower part of circular hole: it consists of a ring set upon its edge, and bars likewise set on their edges. From the outer part of the ring proceed four pieces of iron, by means of which it can be screwed on: it is thus kept out of the cavity of the furnace, and preserved from the heat, whereby it lasts much longer. The sides of the furnace are luted, to confine the heat, and to defend the iron from its action. The luting is so managed, that the inside of the furnace forms in some measure the figure of an inverted truncated cone.

We have thus combined the two figures 7. and 8. in order to describe as exactly as possible this furnace in its entire state; but to prevent confusion, it must be understood, that fig. 7. represents the body of the furnace, with its bottom received within the ash-pit. As in this figure we could not exhibit the bottom of the furnace, we have in fig. 8. supposed the body of the furnace to be cut down through its middle; whereby one half of the undermost hole, with a proportional part of the grate applied to it, is exhibited along with, and nearly opposed to, one half of the upper hole F; and the dotted lines L L, shew the form of the cavity of the furnace after the lute lining has been got in. It is also to be understood, that the ash pit of fig. 8. is not, like the body of the furnace, divided in its middle. but is the ash-pit of fig. 7. only detached from the bottom of the furnace, in order to represent the border D, on which the bottom of the furnace is received.

Now to adapt this furnace to the different operations of chemistry, we may first observe, that for a melting furnace, we need only provide a covering for the upper hole A, which in this case is made the door of the furnace. As this hole is nearly over the grate, it is very convenient for introducing, and examining from time to time, the substances that are to be acted on. The cover for the door may be a flat and square tile or brick. Dr Black usually employs a sort of lid made of plate iron, with a rim that contains a quantity of luting. The degree of heat will be greater in proportion to the number of holes we open in the damping-plate E: by this means the furnace may be employed in most operations in the way of assaying: and though it does not admit of the introduction

introduction of a muffle, yet if a small piece of brick is placed end-ways in the middle of the grate, and if large pieces of fuel are employed, so that the air may have free passage through it, metals may be assayed in this furnace without coming in contact with the fuel. It may therefore be employed in those operations for which a muffle is used; and thus lead and other sundry metals may be brought to their proper calces.

When we wish to employ this furnace for those distillations requiring an intense heat, the earthen retort is to be suspended by means of an iron ring, having three branches standing up from it, *fig. 9*. This ring hangs down from the hole A about half a foot; so that the bottom of the retort rests upon the ring, and is immediately hung over the fuel. The opening round the upper part of the retort, between it and the edges of the hole A, is filled up with broken crucibles or potsherds, and these are covered over with ashes, which transmit the heat very slowly. This furnace then answers for distillations performed with the naked fire.

For distillations with retorts performed in the sand-bath, there is an iron pot, (*fig. 10.*) fitted for the opening of the furnace A, and this is employed as a sand-pot. In these distillations the vent B becomes the door of the furnace.

This furnace answers very well too for the common still; part of which may be made to enter the opening A, and hang over the fire. In this case likewise, the vent B is the door of the furnace, by which fresh fuel is to be added: but in ordinary distillations it is never necessary to add fresh fuel; and even in the distillation of mercury, phosphorus of urine, and indeed during any process whatever, the furnace generally contains sufficient to finish the operation; so effectually is the heat preserved from dissipation, and the consumption of the fuel is so very slow.

Very commodious portable furnaces for experiments and operations in a small scale may be constructed of Black lead Crucibles as follows.

Fig. 2, plate 2. represents a section of such a furnace for distilling in a sand heat. A B is a black lead crucible (supposed, for the more easily showing the construction of the inside of the furnace, to be cut down through the middle). In the bottom of the crucible a circular hole C is cut, and the crucible is supported on an iron trevet *fig. 5*, which has also a circular hole, corresponding to the hole in the bottom of the crucible or a little larger: at a little distance above the bottom a grate G is placed. The plan of the grate is represented by *fig. 3*, having three small projections *a, a, a*, which rest on three notches cut in the inside of the crucible. The top of the crucible is covered with an iron plate, *fig. 6*, having two circular holes in it: The larger one L for holding the sand pot P (the form of which is seen at *fig. 4.*) and the smaller hole S answers both for a door for adding fresh fuel, and for the vent. The sand pot P, hangs by its ledge *r* on the iron plate I, and the retort R is placed with its neck N pointing from the vent S. *Fig. 1.* is a perspective view of the furnace standing on its trevet, with a retort in the sand pot.

In order to have a melting furnace, we take another crucible exactly of the same size with the first, which has a circular hole cut through its bottom; this last crucible is inverted over the other as in *Fig. 7*. A is the first crucible standing on its trevet B. C is the second crucible in-

verted

verted over the other: its hole in the bottom D becoming the vent of the furnace, which may be heightened into a chimney by an iron pipe E. At the edge of the upper crucible, a semicircular hole F is cut, which serves for introducing fresh fuel, or for inspecting the operation. The piece cut out must be preserved, and will serve as a door; and two small holes *h h* must be made in it for introducing the prongs of a fork, Fig. 10. in order to open or shut the door when the furnace is hot. After the matter we are working on is in fusion, the vessel containing it cannot be taken out by the door F; but, in order to do this, we must remove the upper crucible C. As it is too hot to be touched, we must have a wire hoop *w* fixed firmly in a small groove round the crucible. In this wire are two loops *l l*, by which, with the loose handles *m m*, we can easily lift off the hot crucible. This wire hoop is useful also for giving additional strength to the crucible; and, as we may sometimes have occasion to lift the undermost crucible, while it is hot, a similar hoop may be also put round it as at *n n*.

This melting furnace can also be employed as a reverberating one for distillations in the naked fire, the door F serving as an opening for letting out the neck of the retort.

With a very little alteration in its parts this furnace can be easily converted into an assay furnace. For this purpose we must remove the grate G and place a larger one, Fig. 9. on the top of the lower crucible just level with the bottom of the door F, and on this grate the muffle Fig. 11. is to be placed with its mouth corresponding to the door F. A section of this assay furnace is represented by Fig. 8. A, the larger grate, resting on the rim of the under crucible, B the muffle with its mouth corresponding with the door F.

BATHS.

WHERE a strong degree of heat is requisite, as in the fusion of metals, &c. the vessel containing the subject matter is placed among the burning fuel, or immediately over it: this is called *operating in a naked fire*. Where a smaller heat is sufficient, and the vessel employed is either of glass, or of the more tender kinds of earthen ware, the sand-bath or water-bath is used to defend the vessel from the immediate action of the fire, and to render the heat less fluctuating.

Both these baths have their peculiar advantages and inconveniences. In water, the heat is equal through every part of the fluid: whereas in sand it varies in different parts of one perpendicular line, decreasing from the bottom to the top. Water cannot be made to receive, or to transmit to vessels immersed in it, above a certain degree of heat, viz. that which is sufficient to make it boil; and hence it secures effectually against any danger of an excess of heat, in those operations wherein the product would be injured by a heat greater than that of boiling water; but this advantage renders it useless for processes which require a greater heat, and for which sand or other solid intermedia are necessarily employed. There is this convenience also in the sand-bath, that the heat may be readily diminished or increased about any particular vessel, by raising it higher out of the sand or sinking it deeper; that different subjects may be exposed to different degrees of heat from one fire; and that

it keeps the vessels steady. The sand made choice of should be separated from the finer parts by washing, and from little stones by the sieve.

COATING of GLASSES, and LUTES.

SOME processes require to be performed with glass vessels in a naked fire. For these purposes, vessels made of the thinnest glass should be chosen; for these bear the fire without cracking, much better than those which are thicker, and in appearance stronger.

All glasses, or other vessels that are apt to crack in the fire, must be cautiously heated by slow degrees: and when the process is finished, they should be as slowly cooled, unless where the vessel is to be broken to get out the preparation, as in some sublimations: in this case it is more advisable to expose the hot glass suddenly to the cold air, which will soon occasion it to crack, than to endanger throwing down the sublimed matter among the residuum by a blow.

As a defence from the violence of the fire, and to prevent the contact of cold air on supplying fresh fuel, &c. the glass is to be coated over, to the thickness of about half a crown with Windfor loam, softened with water into a proper consistence, and beaten up with some horse-dung, or rather clayey compositions above mentioned in p. 47.

These compositions serve also as a lute, for securing the junctures of the vessels in the distillation of the volatile salts and spirits of animals: for the distillation of acid spirits, the matter may be moistened with a solution of fixed alkaline salt instead of water. For most other purposes, a piece of wet bladder, or paste of flour and water, or of lintseed meal (that is, the cake left after the expression of oil of lintseed), are sufficient lutes.

Sometimes clay and chalk are mixed up into a taste, and spread upon slips of paper; and sometimes gum arabic is used instead of the clay, and mixed up in the same manner.

Wet bladders contract so strongly by drying, that they frequently break the vessels: And the fat lute of Mr Macquer, which is a composition of clay and chalk with oil, is too close for most operations. Where very elastic steams are to be condensed, we are often obliged, even where the common lutes are employed, to leave, or make, an opening which may be occasionally stopped by a plug: By this means we give passage to a part of these vapours, which prevents the bursting of the vessels and facilitates the condensation of the rest. If we wish to collect incondensable vapours, we receive them into a jar inverted under a basin of water or quicksilver, as directed in our Analysis of Vegetables by fire.

Besides these, there are also required some other kinds of lutes for joining vessels together in operations requiring a strong heat, and for lining furnaces. Four parts of sand and one of clay answers best for luting: but for lining the inside of furnaces, six or seven parts of sand to one of clay is necessary, in order to prevent the contraction and consequent cracking of the clay, which it most readily does when freed of sand. Besides this lute immediately next to the fire, three parts, by weight, of charcoal to one of common clay, are first mixed in a dry powder, and as much water is to be added as will make them into balls of the consistence of snow: these balls are beat very firm and compact, by means of a hammer, on the inside of the furnace, to the thickness of about

one

PLATE II.

Fig.1.

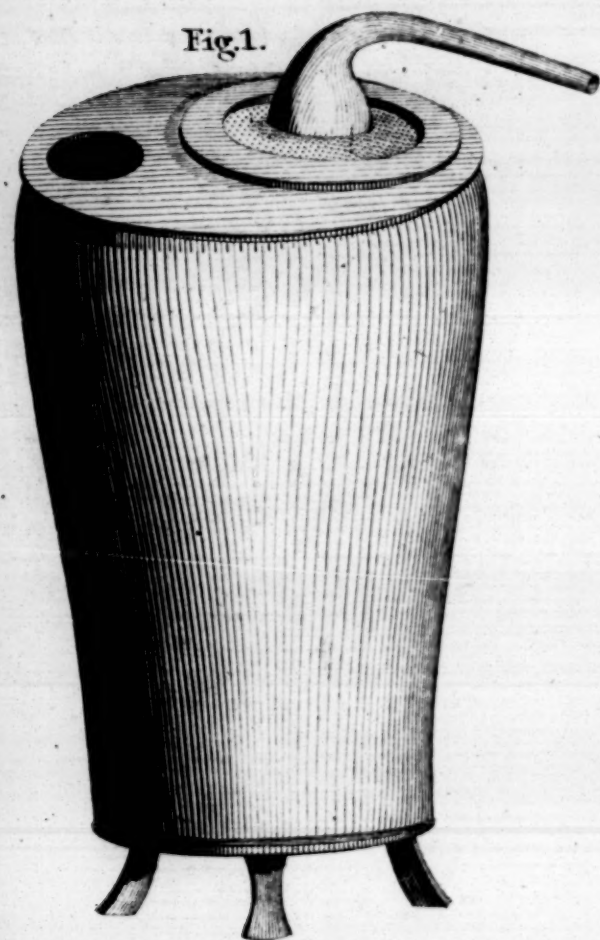


Fig.2.

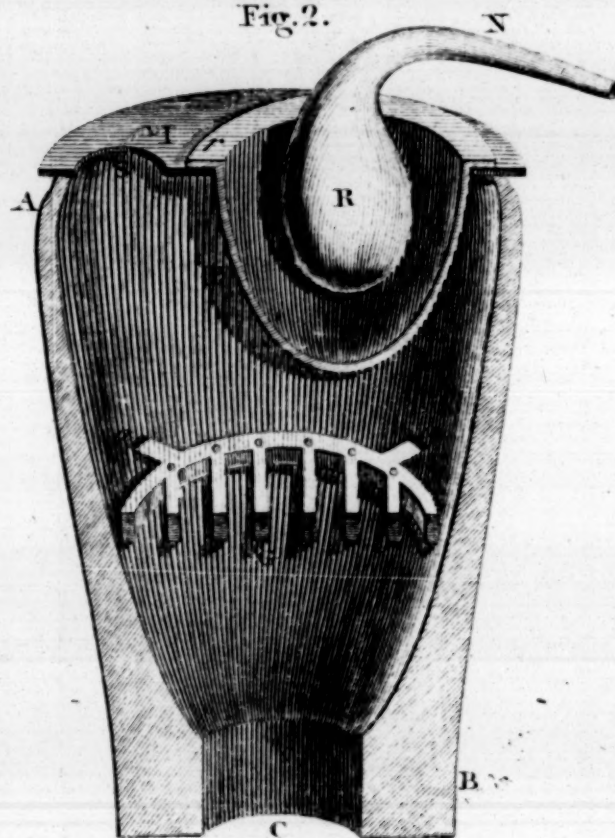


Fig.6.

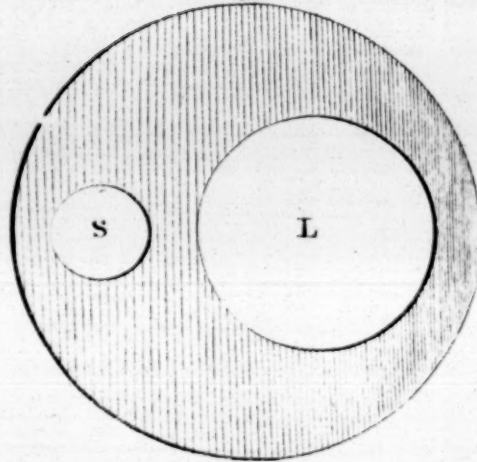


Fig.9.

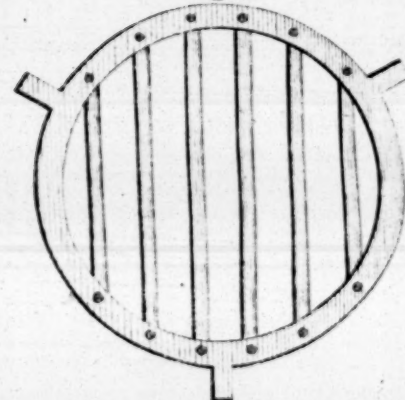


Fig.11.



Fig.7.

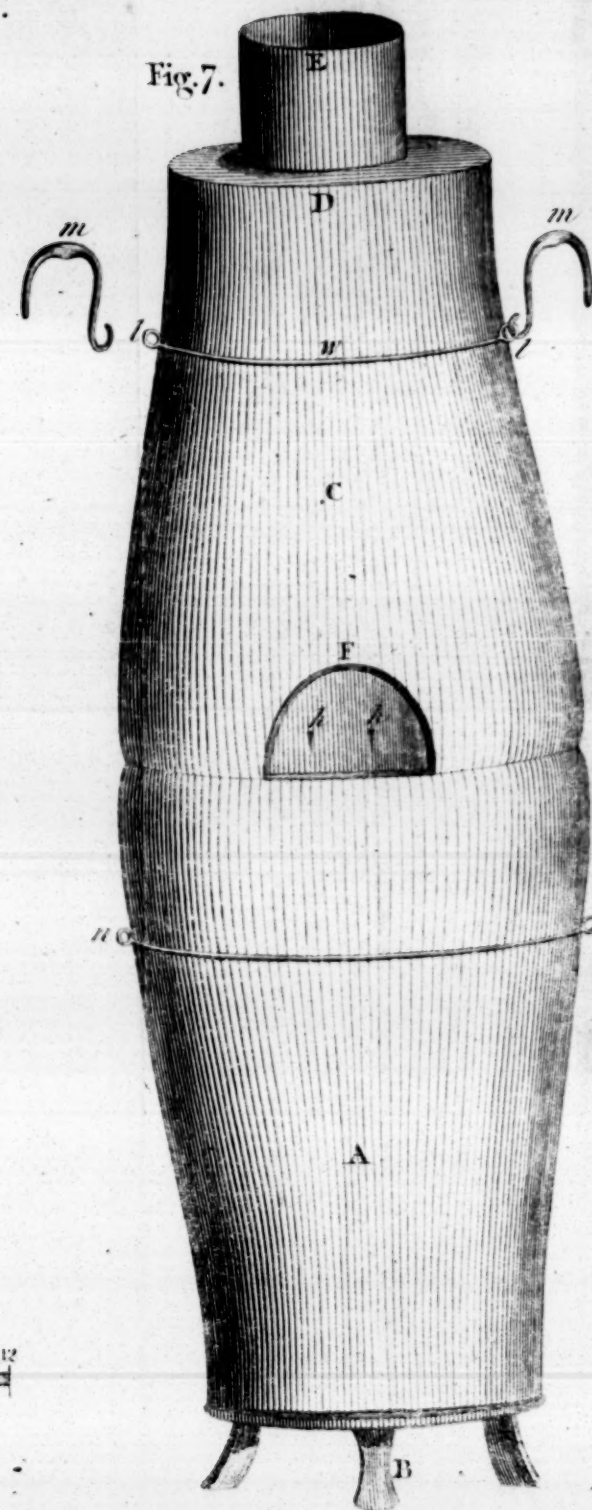


Fig.10.



Fig.8.

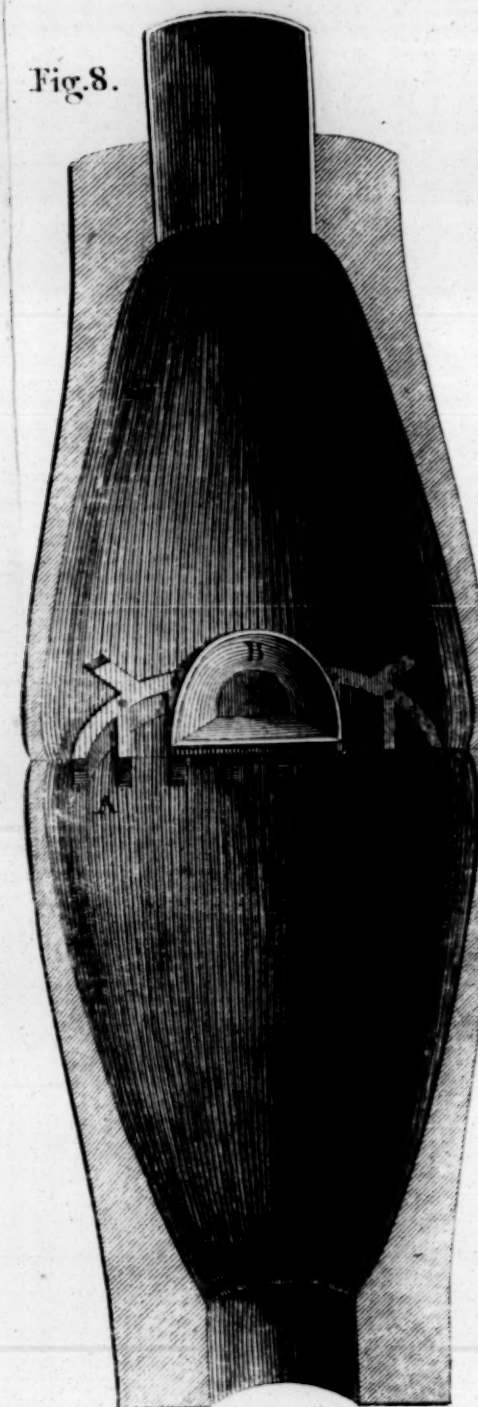


Fig.3.

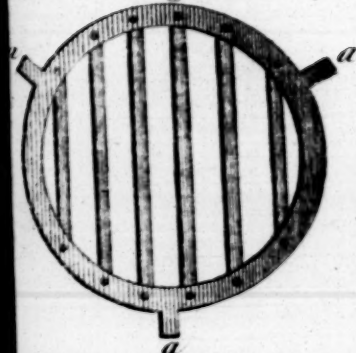
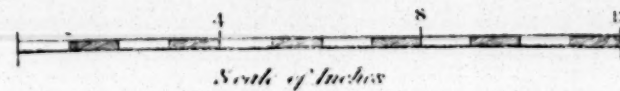
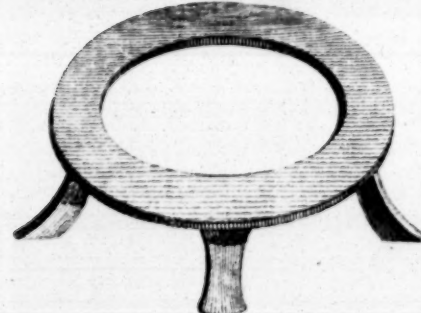


Fig.4.



Fig.5.



one inch and a half: the other lute is spread over this to about the thickness of half an inch; and this too is beat solid by means of a hammer, and allowed to dry slowly, that all cracks and fissures may be prevented. After the body of the furnace is thus lined, the vent is applied, and lined in the same manner; and the whole being dried, which requires a long time, a fire is kindled in the furnace, which is gradually heated for a day or two, and is then raised to the greatest intensity: By these means the whole luting acquires a hardness equal to that of freestone. These are the lutes recommended and used by Dr Black; and, except for some operations in metallurgy, he seems to have been the first who thought of employing charcoal as an ingredient for the lining of furnaces.

The few simple lutes, here described, will be found to answer all the purposes of the more operose compositions, recommended for these intentions by the chemical writers.

VESSELS.

In this place, we shall only give the operator a few general cautions with regard to the *matter* of the vessels designed for containing the subject; and refer their description to the plates, and to the account of the operations in which they are employed.

Metaline vessels possess the advantage of being able to bear sudden alterations of heat and cold, and of being very strong, so as to be capable of confining elastic steams; but, except those made of gold or platina, they are readily corroded by acids, even by the mild ones of the vegetable kingdom. Copper vessels are corroded also by alkaline liquors, and by some neutral ones, as solutions of sal ammoniac. It is observable, that vegetable acids do not act upon this metal by boiling, so much as by standing in the cold; for even lemon juice may be boiled in a clean copper vessel, without receiving from it any taste or ill quality; whereas, in the cold, it soon dissolves so much as to contract a pernicious taint. The tin, with which copper vessels are usually lined, gives likewise a sensible impregnation to acid juices: and this impregnation also is probably not innocent, more especially as a quantity of lead is commonly mixed with the tin. From the want of transparency in these vessels, we are also deprived of the advantage of seeing the different changes during the operation.

The earthen vessels possess none of the desirable qualities for chemical operations, except that of sustaining very violent degrees of heat, without being melted or otherwise changed. These vessels are less liable to external cracks from sudden applications of heat and cold when they are made with a certain proportion of sand mixed with the clay, than when they are made of clay alone. Black lead, too, mixed with the clay, makes the vessels sustain violent degrees, and sudden alterations, of heat surprisingly well: crude clay, reduced to a kind of sand by violent heat, and then mixed with raw clay, is found to furnish vessels excellently fitted for those operations where sand might be corroded: but of all kinds of earthen ware, the most perfect is porcelain, composed of the finest clay mixed with a stony matter capable of melting in a violent heat. This, however, is too costly an article for general use. Reaumur dis-

discovered a method of imitating porcelain, by melting the coarser kinds of glass with a mixture of sand and clay : this has been found to be nearly of the colour of porcelain, to be much stronger than glass, and to bear the most sudden changes of heat and cold that we have occasion to apply. There has not hitherto been any manufacture of this ware ; and till then it will not probably come into general use.

The common earthen vessels are of a loose porous texture : and hence are apt to imbibe a considerable quantity of certain liquids, particularly of those of the saline kind ; which soon discover their having penetrated the vessel, by shooting into saline efflorescences on the outside. Those which are *glazed* have their glazing corroded by acids : by vinegar and the acid juices of fruits, as well as by the stronger acids of the mineral kingdom. And as this glazing consists chiefly of vitrified lead, the impregnation which it communicates to these liquors is of a very dangerous kind. If vinegar be boiled for some time in a glazed earthen vessel, it will yield on being inspissated acetated lead.

The vessels called, from their hardness and compactness *stone ware*, are in a good measure free from the inconveniencies of the coarser earthen ones. Their glazing, being a part of the clay itself superficially vitrified by means of the fumes of common salt, appears to be proof against acids. None of this kind of ware is now manufactured in Britain. It is therefore rarely to be met with.

Glass-vessels suffer no corrosion, and give no taint, in any of the pharmaceutical operations. When therefore they are made of a proper thinness, when they are well annealed, and when blown into a spherical form, so that the heat may be equally applied, they are preferable to all others, where they are not exposed to great and sudden changes of heat and cold, and where strength is not required : What is called the *soft glass*, which contains a quantity of lead in its composition, is the best for chemical purposes. Having made these general remarks, we next come to describe the particular instruments used in pharmacy : but as the nature and uses of each will be better understood after reading the following chapter, and the processes in which they are employed, we shall here only give a short explanation of the figures of these instruments : and to which the reader may occasionally recur in going over the sequel of the work.

EXPLANATION of PLATE III.

Fig. 1. An evaporating dish, being such a section of a globe of glass as is best fitted for exposing a large surface.

Fig. 2. The chemical phial or matrass, furnished with a long neck for allowing the vapours raised by heat or mixture to circulate and be condensed, whereby their escape is prevented.

Fig. III. A retort and receiver together, to shew their connection during distillation or sublimation. The receiver is of a conical figure ; whereby the steams have more room to circulate and condense. Dr Black has found this form more convenient, when we wish to get out sublimed matter, or to clean the vessel.

In the last figure was represented an example of the *distillatio per alutis*,

tur, or the distillation by the retort and receiver: and it is used in all cases where nice operations are required, or where metallic vessels would be corroded by the contained matter. The *distillatio per ascensum* is performed by,

Fig. 4. A copper still.

A, The body of the still, containing the matter.

B, The head of the still into which the vapour immediately arises; this is made to fit very closely to the body, so as to require little or no luting.

C, A pipe issuing from the middle of the top of the head, and descending to C, is received into the pipe D.

D, The pipe or worm descending into a large vessel E, containing a quantity of cold water to keep the pipe cool, which facilitates the condensation of the vapours.

F, The further extremity of this pipe, coming out at an opening, in the under part of the vessel E; from this extremity the condensed matter distils.

This instrument is on the construction used and recommended by Dr Black, and varies a little from the common form. He finds it unnecessary that the pipe D should be made serpentine, which renders the cleaning of it very difficult and uncertain.

Fig. 5. A separatory, for separating oil from water.

This instrument has a pipe coming from its side near its middle, and is to be placed under the end of the pipe F, *fig. 4*. The distilled mixture of oil and water by resting in this vessel separates; the oil either swims on the surface of the water above the lateral pipe, or sinks below it; in either case the water will run off by itself through the pipe, and the oil will be detained in the vessel.

Fig. 6. A subliming glass. The under part of which is kept hot, when intended to sublime solid matters, and the upper part is kept cool, whereby the vapour is condensed in the form of a cake at the top. The mouth of the vessel is to be stoped by a loose stopper. This method is not so well fitted for large operations as the retort and receiver.

Fig. 7. Adopters, which are receivers that have pipes issuing from their farther extremity, which are received into other receivers or adopters; we may increase or diminish the number of adopters at pleasure. They are useful for the condensation of very elastic vapours, as those of the caustic volatile alkali, vitriolic ether, &c.

Fig. 8. A retort funnel for pouring liquors into a retort, without wetting the neck of the retort; and it is necessary that in drawing out the funnel we should keep it applied to the upper part of the retort, whereby the drop hangs from the under edge of the funnel, and therefore cannot touch the inside of the retort.

Fig. 9. A crucible which is angled at the top for the convenience of pouring out the contained matter. It is narrow below for receiving small quantities, which in a larger compass might be less easily brought together. The black lead and clay crucibles are often acted on by saline matters, and sometimes destroyed; they answer however much better for fusing metals than those of clay and sand. These last answer best for saline

saline substances: but being more liable to break than the other, they may be made securer by inclosing the crucible containing the matter within another crucible, and filling up the interstice with sand.

The crucible in this figure stands upon a pedestal, which is a piece of clay or brick between the crucible and the grate, to prevent the cold air striking the bottom while the top is hot. To prevent the fuel from falling in, we use covers made of clay, or we invert another crucible upon that containing the matter, and secure the joining by a proper lute.

Fig. 10. A pair of crucible tongs for putting in or taking out the matter to be wrought on.

Fig. 11. The form of the cylindrical glass measures recommended by the College of Edinburgh; for the particular description of these measures see the subsequent article *MEASURES*.

WEIGHTS.

Two different kinds of weights are used in this country: one in the merchandise of gold and silver: the other for almost all other goods. The first we call Troy, the latter Averdupois weight.

The goldsmiths divide the Troy pound into twelve ounces; the ounce into twenty pennyweights; and the pennyweight into twenty-four grains. The Averdupois pound is divided into sixteen ounces; and the ounce into sixteen parts, called drachms.

The pound of the London and Edinburgh pharmacopœias is that of the goldsmiths, divided in the following manner:

The pound	{	twelve ounces.
The ounce		eight drachms.
The drachm		three scruples.
The scruple		twenty grains.

The medical or Troy pound is less than the Averdupois, but the ounce and the drachm greater. The Troy pound contains 5760 grains: the Averdupois 7000 grains. The Troy ounce contains 480 grains; the Averdupois only 437 $\frac{1}{2}$. The Troy drachm 60; the Averdupois drachm somewhat more than 27.

These differences in our weights have occasioned great confusion in the practice of pharmacy. As the druggists and grocers sell by the Averdupois weight, the Apothecaries have not in general kept any weights adjusted to the Troy pound greater than two drachms, using Averdupois ounces. By this means it is apparent, that in all compositions, where the ingredients are prescribed, some by pounds and others by ounces, they are taken in a wrong proportion to each other; and the same happens where any are directed in lesser denominations than the ounce, as these subdivisions, used by the apothecaries, are made to a different ounce.

The Edinburgh college have expressly adverted to the errors arising from this promiscuous use of weights, and strongly recommend the use of the Troy pound and ounce. Sets of those weights are made with accuracy and sold by Mr John Milne founder in the High-street, Edinburgh.



PLATE III N^o I.



FIG.

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FIG.

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FIG. 3

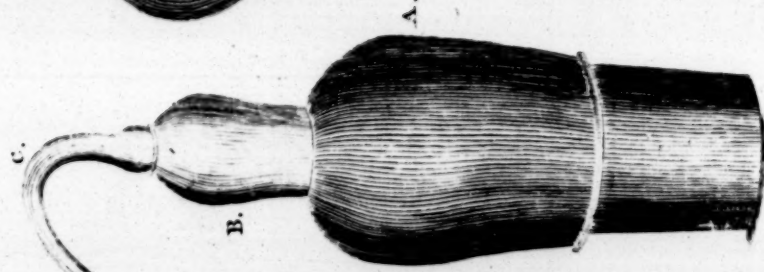


FIG. 4.

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PLATE III. N^o 2.

FIG. 5.



FIG.

6.



FIG. 11.

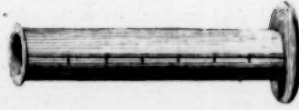


FIG. 7.



FIG. 8.

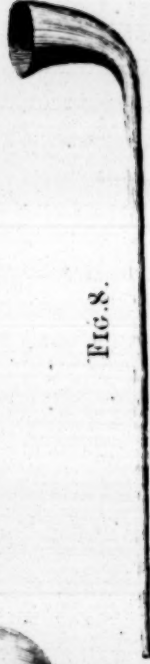


FIG. 9.

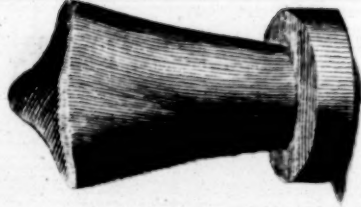
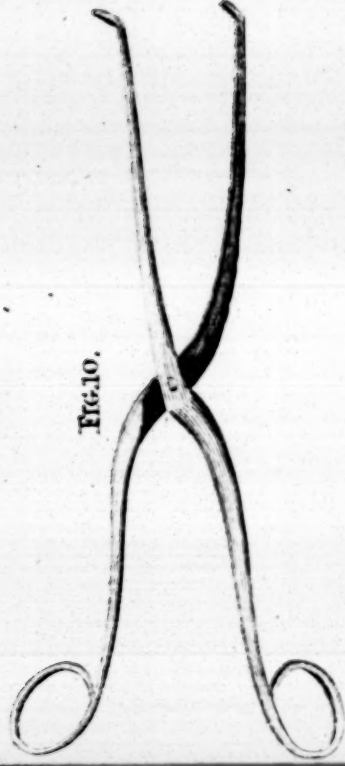


FIG. 10.





MEASURES.

THE measures employed by the London College are the common wine measures.

A gallon	{	eight pints (<i>libra</i> .)
The pint		sixteen ounces.
The ounce		eight drachms.

Though the pint is called by Latin writers *libra* or pound, there is not any known liquor of which a pint measure answers to that weight. A pint of the highest rectified spirit of wine exceeds a pound by above half an ounce; a pint of water exceeds it by upwards of three ounces; and a pint of oil of vitriol weighs more than two pounds and a quarter.

The Edinburgh College, sensible of the many errors from the promiscuous use of weights and measures, and of their different kinds, have in the last edition of their Pharmacopœia entirely rejected measures, and employ the Troy weight in directing the quantity either of solid or fluid substances. For greater convenience in weighing water, wine, and other fluids of nearly the same specific gravity, they have recommended the use of glass measures subdivided like the weights into ounces, drachms, and grains. There are three of these measures of different sizes, although all of them are of the same shape (see Plate III. *fig.* 11.) the largest of them is 10 inches long, and an inch and three quarters wide in the inside; a longitudinal line is engraved on one side of it and on this line transverse marks are made corresponding to ounces, beginning from the bottom, and proceeding upwards to 12 ounces, or one pound. The second measure is six inches long, and one inch diameter within; the scale engraved on its sides corresponds with drachms, beginning from the bottom, and proceeding upwards to 16 drachms or two ounces. The third measure is 4 inches long, and half an inch diameter within; the scale engraved on its sides corresponds with grains, beginning from the bottom, and proceeding upwards to 120 grains or 2 drachms. These measures are made at the glass manufactory at Leith, from patterns sent them by the college of physicians.

As these measures are made to correspond with the respective weights of water, it is evident that they can only be employed for ascertaining determined weights of such fluids as have the same or nearly the same specific gravity with water; as wines, tinctures, infusions, &c. And not for the strong acids, rectified spirit, &c. whose specific gravities are different from that of water. Thus the quantity of strong vitriolic acid filling the 12 ounce, or pound measure, would weigh 22 ounces 1 drachm and 36 grains. And the same measure of rectified spirit of wine would only weigh 10 ounces.

A table of the weights of certain measures of different fluids may on many occasions be useful, both for assisting the operator in regulating their proportions in certain cases, and showing the comparative gravities of the fluids themselves. We here insert such a table for a pint, an ounce and a drachm measure, according to the London pharmacopœia, of those liquids, whose gravity has been determined by experiments that

that can be relied on. The wine gallon contains 231 cubic inches, whence the pint contains $28\frac{1}{2}$, the ounce $1\frac{10}{11}$, and the drachm $1\frac{11}{16}$ of a cubic inch.

	Pint weighs		Ounce measure weighs	
	ounces	drachms	grains	grains
INFLAMMABLE SPIRITS.				
Highly-rectified spirit of wine	12 5 32		38	471
Common-rectified spirit of wine	13 2 40		400	50
Proof spirit	14 1 36		426	531
Dulcified spirit of salt	14 4 48		438	551
Dulcified spirit of nitre	15 2 40		460	571
WINES.				
Burgundy	14 1 36		426	531
Red port	15 1 36		456	57
Canary	15 6 40		475	591
EXPRESSED OILS.				
Olive oil	13 7 29		418	521
Lintseed oil	14 2 8		428	531
ESSENTIAL OILS.				
Oil of turpentine	12 1 4		364	451
of orange peel			408	51
of juniper-berries			419	521
of rosemary			430	531
of origanum			432	54
of carraway seeds			432	54
of nutmegs			436	541
of favin			443	551
of hyssop			443	551
of cummin-feed			448	56
of mint			448	56
of pennyroyal			450	561
of dill-feed			457	571
of fennel-feed			458	571
of cloves			476	591
of cinnamon			476	591
of saffras			503	621

ALKALINE LIQUORS.

Aqua kali puri, <i>Pharm. Lond.</i>	-
Spirit of sal ammoniac	-
Strong sope boiler's ley	-
Lixivium tartari	-

ACID LIQUORS.

Wine vinegar	-
Beer-vinegar	-
Glauber's spirit of salt	-
Glauber's spirit of nitre	-
Strong oil of vitriol	-

ANIMAL FLUIDS.

Urine	-
Cow's milk	-
Asses milk	-
Blood	-

WATERS.

Distilled water	-
Rain-water	-
Spring water	-
Sea-water	-

QUICKSILVER.

Pint weighs	Ounce measure weighs		Drachm measure weighs	
	ounces	drachms	grains	grains
16	0	0	480	60
17	1	10	514½	64½
17	6	24	534	66½
24	0	0	720	90
15	3	44	464	58
15	6	56	476	59½
17	4	0	525	65½
20	2	40	610	76½
28	5	20	860	107½
15	5	20	470	58½
15	6	40	475	59½
16	0	0	480	60
16	1	4	484	60½
15	1	50	456½	57½
15	2	40	460	57½
15	3	12	462	57½
15	5	20	470	58½
214	5	20	6440	805

CHAP.

CHAPTER III.

Of the Pharmaceutical Operations.

SECT I.

SOLUTION.

SOLUTION is an intimate commixture of solid bodies with fluids into one seemingly homogeneous liquor. The dissolving fluid is called a *menstruum* or *solvent*; and the body dissolved is called the *solvend*.

Objections have been made, and perhaps with propriety, to these terms; as it is supposed that the two bodies uniting in solution act reciprocally on each other: there is, however, no danger from the words themselves, if we do not derive them from a mistaken theory. Solution cannot take place, unless one of the bodies, at least, be in a fluid state; and this fluidity is effected either by water or fire: hence solution is said to be performed in the *humid* or in the *dry way*. Thus, for instance, if any quantity of brimstone be dissolved in a solution of fixed alkali, the brimstone is said to be dissolved in the *humid way*: but if the brimstone be dissolved by melting it with the dry alkali, the solution is said to be done in the *dry way*. The compound produced by this mixture is called hepar sulphuris, and is the same in both. Another kind of solution resembling that by the dry way, is, however, to be carefully distinguished from it: If, for example, a piece of Glauber's salt is put into a pan over the fire, the salt very soon assumes a liquid state; but on continuing the heat, it loses its fluidity, and becomes a white powder: this powder is the salt freed from its water, and is found to be very refractory. This liquidity depended on the water of crystallization, being enabled, by the heat, to keep the salt in solution, and the salt ceased to be fluid as soon as its crystallising water was evaporated. This kind of solution, which is sometimes called the watery fusion, differs not from the first, or humid way.

The principal menstrua used in pharmacy, are, *water*, *vinous spirits*, *oils*, *acid* and *alkaline liquors*.

Water is the menstruum of all salts, of vegetable gums, and of animal jellies. Of salts, it dissolves only a determinate quantity, though of one kind of salt more than another; and being thus *saturated*, leaves any additional quantity of the same salt untouched.

Experiments have been made for determining the quantities of water which different salts require for the dissolution. Mr Eller has given a

large set in the Memoirs of the Royal Academy of Sciences of Berlin, for the year 1750, from which the following table is extracted.

Eight ounces by weight of distilled water dissolved,

	oz.	dr. gr.
Of Refined sugar	-	24 0 0
Green vitriol	-	9 4 0
Blue vitriol	-	9 0 0
White vitriol	-	4 4 0
Epſom ſalt	-	4 0 0
Purified nitre	-	4 0 0
Soluble tartar	-	4 0 0
Common ſalt	-	3 4 0
Sal gemmæ	-	3 4 0
Sal catharticus Glauberi	-	3 4 0
Seignette's ſalt	-	3 0 0
Alum	-	2 4 0
Sal ammoniac	-	2 4 0
Vitriolated tartar	-	1 4 0
Salt of hartſhorn	-	1 4 0
Sugar of lead	-	1 2 0
Cream of tartar	-	1 0 0
Borax	-	0 4 20

Though theſe experiments appear to have been made with great care, yet the proportions of the ſeveral ſalts, ſoluble in a certain quantity of water, will not always be found exactly the ſame with theſe above ſet down. Salts differ in their ſolubility according to the degree of their purity, perfection, and dryneſs: the vitriols, and the artificial compound ſalts in general, differ remarkably in this reſpect, according as they are more or leſs impregnated with the acid ingredient. Thus vitriolated tartar, perfectly neutralized, is extremely difficult of ſolution: the matter which remains on making nitrous acid is no other than a vitriolated tartar: and it diſſolves ſo difficultly that the operator is obliged to break the retort in order to get it out; but on adding more of the vitriolic acid, it diſſolves with eaſe. Hence many have been tempted to uſe an over-proportion of acid in this preparation: and we frequently find this acid ſoluble ſalt in the ſhops, under the name of vitriolated tartar. The degree of heat occaſions alſo a remarkable difference in the quantity of ſalt taken up: in very cold weather, eight ounces of water will diſſolve only about one ounce of nitre; whereas in warm weather, the ſame quantity will take up four ounces. To theſe circumſtances are probably owing, in part, the remarkable differences in the proportional ſolubilities of ſalts, as determined by different authors. It is obſervable that common ſalt is leſs affected in its ſolubility by a variation of heat than any other; water in a temperate ſtate diſſolving nearly as much of it as very hot water; and accordingly this is the ſalt in which the different experiments agree the beſt. In the experiments of Hoffmann, Newmann, and Petit, the proportion of this ſalt, on a reduction of the numbers, comes out exactly the ſame, viz. three ounces of the ſalt to eight of water; Dr Browning makes the quantity

quantity of salt a little more; Dr Grew, a drachm and a scruple more; and Eller, as appears in the above table, four drachms more: so that in the trials of fix different persons, made probably in different circumstances, the greatest difference is only one sixth of the whole quantity of salt; whereas in some other salts there are differences of twice or thrice the quantity of the salt. In the experiments from which the table is drawn, the water was of the temperature of between 40 and 42 degrees of Fahrenheit's thermometer.

Some salts omitted by Eller are here subjoined: the first is taken from Dr Grew, and the other four from Neumann.

Eight ounces of water dissolved

Of fixed alkaline salt	oz. dr. gr.
Sal diureticus	above 8 0 0
Sugar-candy, both brown and white	8 0 0
Sugar of milk	9 0 0
Essential salt of sorrel	0 2 40
	0 1 20

Though water takes up only a certain quantity of one kind of salt, yet when saturated with one, it will still dissolve some portion of another; and when it can bear no more of either of these, it will still take up a third, without letting go any of the former. The principal experiments of this kind, which have been made relative to pharmaceutical subjects are exhibited in the following table; of which the two first articles are from Grew, and the others from Eller.

Fully saturated with		Water, 32 parts by weight,	
[Nitre Common salt Nitre Common alkali Volatile alkali Sal ammoniac Soluble tartar Vitriolated tartar Glauber's salt Epfom salt Borax	[Sal ammoniac Common salt Fixed alkali Sugar	[Sal ammoniac Common salt Fixed alkali Sugar	[Sal ammoniac Common salt Fixed alkali Sugar

In regard to the other class of bodies for which water is a menstruum, viz. those of the gummy and gelatinous kind, there is no determinate point of saturation: the water unites readily with any proportions of them, forming, with different quantities, liquors of different consistence. This fluid takes up likewise, when assisted by trituration, the vegetable gummy resins, as ammoniacum and myrrh; the solutions of which though imperfect, that is, not transparent but turbid and of a milky hue, are nevertheless applicable to valuable purposes in medicine. It mixes with vinous spirits, with acid and alkaline liquors, not with oils, but imbibes some

some of the more subtile parts of essential oils so as to become impregnated with their smell and taste.

Rectified spirit of wine, or rather *alkohol*, is the menstruum of the essential oils and resins of vegetables; of the pure distilled oils, and several of the colouring and medicinal parts of animals; of some mineral bituminous substances, as of ambergris; and of sopes, though it does not act upon the expressed oil and fixed alkaline salt, of which sopo is composed: whence, if sopo contains any superfluous quantity of either the oil or the salt, it may by means of this menstruum be excellently purified. It dissolves, by the assistance of heat, volatile alkaline salts: and more readily the neutral ones, composed either of fixed alkali and the acetous acid, as the sal diureticus, or of the volatile alkali and the nitrous acid, as also the salt of amber, &c. It mixes with water and with acids; not with alkaline lixivium.

Oils dissolve vegetable resins and balsams, wax, animal fats, mineral bitumens, sulphur, and certain metallic substances, particularly lead. The expressed oils are, for most of these bodies, more powerful menstrua than those obtained by distillation; as the former are more capable of sustaining, without injury, a strong heat, which is in most cases necessary to enable them to act. It is said, that one ounce of sulphur will dissolve in three ounces of expressed oil, particularly linseed oil; but requires six ounces of essential oil, as turpentine.

ALL acids dissolve alkaline salts, alkaline earths, and metallic substances. The different acids differ greatly in their action upon these last; one dissolving only some particular metals; and another, others.

The vegetable acids dissolve a considerable quantity of zinc, iron, copper, lead, and tin; and extract so much from the metallic part of antimony, as to become powerfully emetic: They dissolve lead more readily, if the metal be previously calcined by fire, than in its metallic state.

The *muratic* acid dissolves zinc, iron, and copper; and though it scarcely acts on any other metallic substance in the common way of making solutions, it may nevertheless be artfully combined with them all. The corrosive sublimate, and antimonial caustic of the shops, are combinations of it with mercury and the metallic part of antimony, effected by applying the acid, in the form of fume, to the subjects, at the same time also strongly heated.

The *nitrous* acid is the common menstruum of all metallic substances, except gold and the metallic part of antimony; of which two, the proper solvent is a mixture of the nitrous and *muratic* acids, called *aqua regia*.

The *vitriolic* acid, diluted with water, easily dissolves zinc and iron. In its concentrated state, and assisted by a boiling heat, it may be made to corrode, or imperfectly dissolve, most of the other metals.

Fixed air, or the aerial acid, dissolves iron, zinc, and calcareous earth; and these solutions must be conducted without heat.

ALKALINE lixivium dissolve oils, resinous substances, and sulphur. Their power is greatly promoted by the addition of quicklime; instances

stances of which occur in the preparation of sope, and in the common caustic. Thus acuated, they reduce the flesh, bones, and other solid parts of animals, into a gelatinous matter.

This increased acrimony in alkaline salts, is owing to the abstraction of their fixed air; that acid having a greater attraction for quicklime than for alkalis.

Solutions made in water and in spirit of wine possess the virtues of the body dissolved; while oils generally sheath its activity, and acids and alkalis vary its quality. Hence watery and spirituous liquors are the proper menstrua of the native virtues of vegetable and animal matters.

Most of the foregoing solutions are easily effected, by pouring the menstruum on the body to be dissolved, and suffering them to stand together for some time exposed to a suitable warmth. A strong heat is generally requisite to enable oils and alkaline liquors to perform their office; nor will acids act on some metallic bodies without its assistance. The action of watery and spirituous menstrua is likewise expedited by moderate heat; though the quantity which they afterwards keep dissolved is not, as some suppose, by this means increased: all that heat occasions these to take up, more than they would do in a longer time in the cold, will, when the heat ceases, subside again. This at least is most commonly the case, though there may be some instances of the contrary.

The action of acids on the bodies which they dissolve is generally accompanied with heat, effervescence, and a copious discharge of elastic fluids, different in different cases.

There is another species of solution, in which the moisture of the air is the menstruum. Fixed alkaline salts and those of the neutral kind composed of alkaline salts and the vegetable acids, or of soluble earths and any acid except the vitriolic, and some metallic salts, on being exposed for some time to a moist air, gradually attract humidity, and at length become liquid. Some substances, not dissoluble by the application of water in its grosser form, as the butter of antimony, are easily liquefied by this slow action of the aerial moisture. This process is called *deliquation*.

S E C T. II.

EXTRACTION.

THE liquors which dissolve certain substances in their pure state, serve likewise to *extract* them from admixtures of other matter. Thus ardent spirit, the menstruum of essential oils and resins, takes up the virtues of the resinous and oily vegetables, as water does those of the mucilaginous and saline; the inactive earthy parts remaining untouched by both. Water extracts likewise from many plants substances which by themselves it has little effect upon; even essential oils being, as we have formerly observed, rendered soluble in that fluid, by the admixture of gummy and saline matter, of which all vegetables participate.

ticipate in a greater or less degree. Thus many of the aromatic plants, and most of the bitters and astringents, yield their virtues to this menstruum.

Extraction is performed, by *macerating* or *steeping* the subject in its appropriated menstruum in the cold: or *digesting* or *circulating* them in a moderate warmth: or *infusing* the plants in the boiling liquor, and suffering them to stand in a covered vessel till grown cold; or actually *boiling* them together for some time. If the vegetable matter is itself succulent and watery, it is sometimes only necessary to express the juice, and evaporate it to the proper consistence.

The term *digestion* is sometimes used for maceration; and in this case, the process is directed to be performed *without heat*: where this circumstance is not expressed, digestion always implies the use of heat. Circulation differs little from digestion; not only that the steam into which a part of the liquor is resolved by the heat, is, by means of a proper disposition of the vessels, condensed, and conveyed back again upon the subject. Digestion is usually performed in a matrafs bolt-head, Florence flask, or the like; either of which may be converted into a circulatory vessel, by inverting another into the mouth of it, and securing the juncture with a piece of wet-bladder. A single matrafs, if its neck be very long and narrow, will answer the purpose as effectually; the vapour cooling and condensing before it can rise to the top: in a vessel of this kind, even spirit of wine, one of the most volatile liquors we know, may be boiled without any considerable loss. The use of this instrument is likewise free from the inconvenience which may in some cases attend the other, of the uppermost vessel being burst or thrown off. As the long necked matrasses here recommended are difficultly filled or emptied, and likewise very dear, a long glass tube may be occasionally substituted to those with shorter necks.

Heat greatly expedites extraction; but by this means proves as injurious to some substances, by occasioning the menstruum to take up their grosser and more ungrateful parts, as it is necessary for enabling it to extract the virtues of others. Thus guaiacum and logwood impart little to aqueous liquors without a boiling heat; while even a small degree of warmth proves greatly prejudicial to the fine bitter of carduus benedictus. This plant, which infused in boiling or digested in sensibly hot water, gives out a nauseous taste so offensive to the stomach as to promote vomiting, yields to cold water a grateful balsamic bitter.

As heat promotes the dissolving power of liquids; so cold, on the other hand, diminishes it. Hence tinctures or extractions made by a considerable heat, deposite in cold weather a part of their contents, and thus become proportionally weaker: a circumstance which deserves particular regard.

S E C T. III.

DEPURATION.

THERE are different methods of *depurating* or purifying liquors from their feculencies, according as the liquor itself is more or less tedious, or the feculent matter of greater or less gravity.

This

Thin fluids readily deposit their more ponderous impurities by standing at rest for some time in a cool place; and may then be *decanted*, or poured off clear, by inclining the vessel.

Glutinous, unctuous, or thick substances, are to be liquefied by a suitable heat; when the grosser feculencies will fall to the bottom; and the lighter arising to the surface, may be *despumated* or skimmed off.

Where the impurities are neither so ponderous as to subside freely to the bottom, nor so light as to arise readily to the surface, they may be separated in great measure by *colature* through strainers of linen, woollen, or other cloth, and more perfectly by *filtration* through a soft bibulous kind of paper made for this purpose.

The grey paper, which covers pill boxes as they come from abroad, is one of the best for this purpose; it does not easily break when wetted, or tinge the liquor which passes through it, which the reddish sort called *blossom paper* frequently does. The paper is supported by a funnel, or piece of canvas fixed in a frame. When the funnel is used it is convenient to put some straws, small sticks, or slender glass rods, between the paper and its sides. to prevent the weight of the liquor from pressing the paper so close to it, as not to allow room for the fluid to transude. In some cases a funnel made of wire is put between the paper and the glass funnel. There is also a kind of glass funnel with ridges down its sides made on purpose for this use.

Glutinous and unctuous liquors, which do not easily pass through the pores of a filter or strainer, are *clarified* by beating them up with whites of eggs; which concreting and growing hard when heated, and entangling the impure matter, arise with it to the surface: the mixture is to be gently boiled till the scum begins to break, when the vessel is to be removed from the fire, the cruft taken off, and the liquor passed through a flannel bag.

Decantation, colature, and filtration, are applicable to most of the medicated liquors that need purification. Despumation and clarification very rarely have place; since these, along with the impurities of the liquor, frequently separate its medicinal parts. Thus, if the decoction of poppy heads, for making diacodum, be solicitously skimmed or clarified, the medicine will lose almost all the virtue that the poppies communicated; and instead of a mild opiate, turns out little other than a plain syrup of sugar.

It may be proper to observe, that the common sorts of filtering paper are apt to communicate a disagreeable flavour: and hence in filtering fine bitters or other liquor, whose gratefulness is of considerable consequence, the part which passes through first ought to be kept separate for inferior purposes.

S E C T. IV.

C R Y S T A L L I S A T I O N.

WATER, assisted by heat, dissolves a larger proportion of most saline substances that it can retain when cold: hence on the abatement of the heat, a part of the salt separates from the menstruum, and con-
cresc

cretes at the sides and bottom of the vessel. These concretions, unless too hastily formed by the sudden cooling of the liquor, or disturbed in their coalescence by agitation, or other similar causes, prove transparent and of regular figures.

Salts, dissolved in a large quantity of water, may be recovered from it in their crystalline form, by boiling down the solution till so much of the fluid has exhaled as that the remainder will be too little to keep the salt dissolved, when grown perfectly cold. It is customary to continue the evaporation till the salt shews a disposition to concreate even in hot water, by forming a pellicle on that part which is least hot, viz. on the surface. If large, beautiful, and perfectly figured crystals are required, this point is somewhat too late: for if the salt thus begins to a coalesce while considerably hot, on being removed to a cold place its particles will run too hastily and irregularly together; the pellicle at the same time falling down through the liquor, proves a farther disturbance to the regularity of the crystallisation.

In order to perform this process in perfection, the evaporation must be gentle, and continued no longer than till some drops of the liquor, let fall on a cold glass plate, discover crystalline filaments. When this mark of sufficient exhalation appears, the vessel is to be immediately removed from the fire into a less warm, but not cold place, and covered with a cloth to prevent the access of cold air, and consequently the formation of a pellicle.

The fixed alkalies, especially the mineral, when fully saturated with fixed air or the aerial acid, assume a crystalline form; but these crystals are not so perfect as when the same alkalies are united with the other acids; the volatile alkalies cannot crystallise by the method just described, because they escape before the menstruum exhales.

Some even of the other neutral salts, particularly of those which contain metallic bodies are the basis, are so strongly retained by the aqueous fluid, as not to exhibit any appearance of crystallisation, unless some other substance be added, with which the water has a greater affinity. The Table of Affinity shews that spirit of wine is such a substance; by the prudent addition of which, these kinds of salts separate freely from the menstruum, and form large and beautiful crystals scarcely obtainable by any other means.

The operator must be careful not to add too much of the spirit; lest, instead of a gradual and regular crystallisation, the salt be hastily precipitated in a powdery form. One twentieth part of the weight of the liquor will in most cases be a sufficient, and in some too large a quantity.

Different salts require different quantities of water to keep them dissolved: and hence a mixture of two or more dissolved in this fluid, they will begin to separate and crystallise at different periods of the evaporation. On this foundation, salts are freed, not only from such impurities as water is not capable of dissolving and carrying through the pores of a filter, but likewise from admixture of each other; that which requires most water to dissolve shooting first into crystals.

It is proper to remark, that a salt, when crystallising, still retains, and combines with, a certain portion of water: this water is not essenti-

also the salt as a salt, but is essential to a salt as being crystallised; it is therefore called by the chemists the *water of crystallisation*. The quantity of this water varies in different salts: In some of them, as in Glauber's salt, alum, and copperas, it makes up about one half of their weight; in others, as in nitre, common salt, and especially selenites, it is in very small quantity. As salts unite to the water of their crystallisation by their attraction for water alone, we accordingly find that this water is perfectly pure, and contains in complete crystals, no substance foreign to the salts. Salts not only differ in the quantity of water necessary to their solution, but some of them are also soluble with equal facility in cold as in hot water. Sometimes, then, we employ evaporation; sometimes cooling; and at other times both these expedients are used alternately, to separate different salts dissolved in the same liquor. It is obvious, that those which are nearly or equally soluble in cold as in boiling water, can only be crystallised by evaporation; those again which are much more soluble in boiling than in cold water, are to be separated by cooling. Of the first of these is common or muriatic salt: of the latter is nitre or saltpetre. To separate these two salts, when both of them happen to be dissolved in the same water, we have recourse to alternate evaporation and cooling. If in such a solution a pellicle appears in the boiling liquor before crystals can be formed in cooling, we then conclude that the common salt predominates: In this case we evaporate the water, and separate the common salt as fast as it is formed, till the liquor on cooling shows crystals of nitre: we then allow the nitre to crystallise by cooling. After all the nitre which had been dissolved by the heat alone, has now separated by cooling, we resume the evaporation, and separate the common salt, till the cooling liquor again shews crystals of nitre. We thus repeat the same series of operations, by which means these two salts may be alternately crystallised; the one by evaporation, the other by cooling, till they are perfectly separated from each other. If in the beginning of the operation the liquor had, upon trial, given crystals of nitre by cooling, before any pellicle appeared on its surface when boiling, this would have indicated that the nitre was predominant in the solution; the nitre in this case would have been crystallised, first by cooling till the quantity of nitre exceeding that of the common salt having been separated, the common salt would next have crystallised in its turn by evaporation. The example we have now given may be applied to other salts, or to a number of salts which may happen to be dissolved in the same liquor. For though there are few so completely soluble in cold water as common salt, and few so scantily as nitre; yet there are scarcely two salts who either precisely shew the same solubility or the same appearance of their crystals. It is obvious, too, that by crystallisation we discover the peculiar predominant salt in any solution of mixed saline matter; but as one salt always takes down a small portion of another, it is necessary to redissolve the first products, and repeat the crystallisation, in order to render the separation complete.

We see, then, that though the crystal appearance and form does not alter the salt itself, yet that this process affords an elegant method of discovering compound solutions of salts, of judging their purity, and, lastly,

lastly of separating different salts from each other. CrySTALLISATION, therefore, is one of the most important agents in pharmacy, and ought to be well understood. We shall attempt to explain the particular management in crySTALLISING particular salts, when we come to treat of each separately.

S E C T. V.

PRECIPITATION.

BY this operation, bodies are recovered from their solutions, by means of the addition of some other substance, with which either the menstruum, or the body dissolved, have a greater affinity than they have with each other.

Precipitation, therefore, is of two kinds; one, where the substance superadded unites with the menstruum, and occasions that which was before dissolved to be thrown down; the other, in which it unites with the dissolved body, and falls with it to the bottom. Of the first, we have an example in the precipitation of sulphur from alkaline lixivia by the means of acids; of the second, in the precipitation of mercury from aquafortis by the muriatic acid.

The subjects of this operation, as well those which are capable of being precipitated as those which precipitate them, will readily appear by the Table of Attractions. The manner of performing it is so simple, as to need no particular directions; all that is required, is to add the precipitant by degrees, as long as it continues to occasion any precipitation. When the whole of the powder has fallen, it is to be well *edulcorated*, that is, washed in several fresh parcels of water, and afterwards dried for use.

When metals are employed as precipitants, as in the purification of martial vitriol from copper by the addition of fresh iron, they ought to be perfectly clean and free from any rusty or greasy matter: otherwise they will not readily, if at all, dissolve, and consequently the precipitation will not succeed; for the substance to be precipitated separates only by the additional one dissolving and taking its place. The separated powder, often, instead of falling to the bottom, lodges upon the precipitant; from which it must be occasionally shaken off, for reasons sufficiently obvious.

Though, in this operation, the precipitated powder is generally the part required for use, yet some advantage may be frequently made of the liquor remaining after the precipitation. Thus when fixed alkaline salt is dissolved in water, and sulphur dissolved in this lixivium; the addition of acids separates and throws down the sulphur, only in virtue of the acid uniting with, and neutralizing the alkali by which the sulphur was held dissolved: consequently, if the precipitation be made with the vitriolic acid, and the acid gradually dropt in till the alkali be completely saturated, that is, as long as it continues to occasion any precipitation or turbidness, the liquor will yield, by proper evaporation and crySTALLISATION, a neutral salt, composed of the vitriolic acid and fixed alkali, that is, vitriolated tartar. In like manner, if the precipitation be

be made with the nitrous acid, a true nitre may be recovered from the liquor: if with the muriatic, the salt called cubic nitre; and if with the acid of vinegar, the kali acetata.

S E C T. VI.

EVAPORATION.

EVAPORATION, the third method of recovering solid bodies from their solutions, is effected by the means of heat; which *evaporat* the fluid part, and the matter which was dissolved therein is left behind in its solid form.

The general rules for evaporation are, To place the matter in a flat, shallow wide vessel, so that a large surface of the liquor may be presented to the air: for it is only from the surface that evaporation takes place. The degree of heat ought to be proportioned to the volatility of the substance to be evaporated, and to the degree of the fixity of the matter to be left: Thus, the less fixed the matter to be left is, and the more strongly it adheres to the volatile parts, the less the degree of heat ought to be; and in such cases, too, a forcible current of air is sometimes scarcely admissible: On the contrary, when the matter to be evaporated is not very volatile, and when the matter to be left is very fixed, and does not adhere strongly to the volatile part, the evaporation may be urged by a strong heat, aided by a current of air directed upon the surface of the liquor.

This process applicable to the solutions of all those substances which are less volatile than the menstruum, or which will not exhale by the heat, requisite for the evaporation of the fluid: as the solutions of fixed alkaline salts; of the gummy, gelatinous, and other inodorous parts of vegetables and animals in water; and of many resinous and odorous substances in spirit of wine.

Water extracts the virtues of sundry fragrant aromatic herbs, almost as perfectly as rectified spirit of wine: but the aqueous infusions are far from being equally suited to this process with those made in spirit; water carrying off the whole odour and flavour of the subject, which that lighter liquor leaves entire behind it. Thus a watery infusion of mint loses in evaporation the smell, taste, and virtues, of the herb; while a tincture drawn with pure spirit, yields, on the same treatment, a thick balsamic liquid, or solid gummy resin, extremely rich in the peculiar qualities of the mint.

In evaporating these kinds of liquors, particular care must be had, towards the end of the process, that the heat be very gentle: otherwise the matter as it grows thick will burn to the vessel, and contract a disagreeable smell and taste: this burnt flavour is called *empyreuma*. The liquor ought to be kept stirring during the evaporation; otherwise a part of the matter concretes on the surface exposed to the air, and forms a pellicle which impedes the farther evaporation. More particular directions for performing this operation to the greatest advantage will be given hereafter.

S E C T.

S E C T. VII.

DISTILLATIONS.

IN the foregoing operation fluids are rarefied by heat into steam or vapour, which is suffered to exhale in the air, but which it is the business of distillation to collect and preserve. For this purpose the steam is received in proper vessels, and being there cooled, condenses into a fluid form again.

There are two kinds of distillation; by the one, the more subtle and volatile parts of liquors are elevated from the grosser; by the other liquids incorporated with solid bodies are forced out from them with vehemence by fire.

To the first belong, the distillation of the pure inflammable spirit from vinous liquors: and of such of the active parts of vegetables as are capable of being extracted by boiling water or spirit, and at the same time of arising along with their steam.

As boiling water extracts or dissolves the essential oils of vegetables, while blended with the other principles of the subject, without saturation, but imbibes only a determinate, and that a small proportion of them, in their pure state; as these oils are the only substances, contained in common vegetables, which prove totally volatile in that degree of heat; and as it is in them that the virtues of aromatics, and the peculiar odour and flavour of all plants reside; it is evident, that water may be impregnated by distillation, with the more volatile parts of many vegetables: that this impregnation is limited, the oil arising in this process pure from those parts of the plant which before rendered it soluble in water without limitation: hence greatest part of the oil separates from the distilled aqueous liquor, and, according to its greater or less gravity, either sinks to the bottom or swims on the surface: that consequently infusions and distilled waters are very different from each other: that the first may be rendered stronger by pouring the liquor on fresh parcels of the subject; but that the latter cannot be in like manner improved by *co-bobating*, or re-distilling them from fresh agents.

As the oils of many vegetables do not freely distil with a less heat than that in which water boils; as rectified spirit of wine is not susceptible of this degree of heat; and as this menstruum totally dissolves these oils in their pure state; it follows, that spirit elevates far less from most vegetables than water; but that nevertheless the distilled spirit, by keeping all that it does elevate perfectly dissolved, may, in some cases, prove as strong of the subject as the distilled water. The more gentle the heat, and the slower the distillation goes on, the volatile parts are the more perfectly separated in their native state.

The apparatus used for distilling spirits, waters, and oils, consists of a *still*, or copper vessel, for containing the subject, on which is luted a large *head* with a *swan-neck*. The vapour arising into the head, is thence conveyed through a *worm*, or long spiral pipe, placed in a vessel of cold wa-

ter called a *refrigeratory*; and being there condensed, runs down into the *receiver*. (See *fig. 4. PLATE III.*)

It may be observed, that as the parts which are prepared in evaporation cannot arise in distillation, the liquor remaining after the distillation properly depurated and inspissated, will yield the same extracts as those prepared from the tincture or decoction of the subject made on purpose for that use; the one of these operations collecting only the volatile part, and the other more fixed: so that where one subject contains medicinal parts of both kinds, they may thus be obtained distinct, without one being injured by the process which collects the other.

THE subjects of the second kind of distillation are, the gross oils of vegetables and animals, the mineral acids, and the metallic fluid quicksilver: which, as they acquire a much stronger degree of heat to elevate them than the foregoing liquors can sustain, so they likewise condense without arising so far from the action of the fire. The distillation of these is performed in low glass vessels, called, from their neck being bent to one side, *retorts*: to the farther end of the neck a *receiver* is luted, which standing without the furnace, the vapours soon condense in it, without the use of a refrigerator: (see *fig. 3. PLATE III.* and *R fig. 2. PLATE II.*) nevertheless, to promote this effect it is usual, especially in warm weather, to cool the receiver, by occasionally applying wet cloths to it, or keeping it partly immersed in a vessel of cold water.

The vapours of some substances are so sluggish, or strongly retained by a fixed matter, as scarcely to arise even over the low neck of the retort. These are most commodiously distilled in freight necked earthen vessels, called *long necks*, laid on their side, so that the vapour passes off laterally with little or no ascent: a receiver is luted to the end of the neck without the furnace. In this manner, the vitriolic acid was distilled. The matter which remains in the retort or long-neck, after the distillation, is vulgarly called *caput mortuum*.

In these distillations, a quantity of elastic air is frequently generated: which, unless an exit be allowed, blows off or bursts the receiver. The danger of this may be prevented, by leaving a small hole in the luting, to be occasionally opened or stopt with a wooden plug, or by fitting to the apparatus other vessels, by which the vapours may be condensed, or conveyed away.

S E C T. VIII.

SUBLIMATION.

ALL fluids are volatile by heat, and consequently capable of being separated, in most cases, from fixed matters, by the foregoing process; so various solid bodies are subjected to a similar treatment. Fluids are said to *distil*, and solids to *sublime*; though sometimes both are obtained in one and the same operation. If the subliming matter concretes into a solid hard mass, it is commonly called a *sublimate*; if into a powdery form, *flowers*.

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The principal subjects of this operation are, volatile alkaline salts; neutral salts, composed of volatile alkalis and acids, as sal ammoniac; the salt of amber, and flowers of benzoïn; mercurial preparations; and sulphur. Bodies of themselves not volatile, are frequently made to sublime by the mixture of volatile ones: thus iron is carried up by sal ammoniac in the preparation of the *flores martiales*, or *ferrum ammoniacale*.

The fumes of solid bodies in close vessels rise but a little way, and adhere to that part of the vessel where they concreate. Hence a receiver or condenser is less necessary here than in the preceding operation; a single vessel, as a *mâtasse*, or tall *vial*, or the like, being frequently sufficient.

SECT. IX.

EXPRESSION.

THE *press* is chiefly used for forcing out the juices of succulent herbs and fruits, and the insipid oils of the unctuous seeds and kernels.

The harder fruits, as quinces, require to be previously well beat or ground; but herbs are to be only moderately bruised. The subject is then included in a hair-bag, and pressed between wooden plates, in the common screw-press, as long as any juice runs from it.

The expression of oils is performed nearly in the same manner as that of juices; only here, iron plates are substituted for the wooden ones. The subject is well pounded, and included in a strong canvas bag, between which, and the plates of the press, a haircloth is interposed.

The insipid oils of all the unctuous seeds are obtained uninjured, by this operation, if performed without heat; which, though it greatly promotes the extraction of the oil, at the same time gives an ungrateful flavour, and increases the oil's disposition to grow rancid.

The oils expressed from aromatic substances generally carry with them a portion of their essential oil; hence the smell and flavour of the expressed oils of nutmegs and mace. They are very rarely found impregnated with any of the other qualities of the subject: oil of mustard-seed, for instance, is as soft and void of acrimony as that of the almond, the pungency of the mustard remaining entire in the cake left after the expression.

SECT. X.

EXSICCATION.

THERE are two general methods of exsiccating or drying moist bodies; in the one, their humid parts are exhaled by heat; in the other, they are imbibed or absorbed by substances, whose soft and spongy texture adapts them to that use. Bodies intimately combined with, or dissolved in a fluid, as recent vegetables and their juices, require the first; such as are only superficially mixed, as when earthy or indissoluble powders are ground with water, are commodiously separated from it by the second.

X.

Vegetables

Vegetables and their parts are usually exsiccated by the natural warmth of the air; the assistance of a gentle artificial heat may nevertheless, in general be not only safely, but advantageously had recourse to. By a moderate fire, even the more tender flowers may be dried, in a little time, without any considerable loss, either of their odour, or lively colour; which would both be greatly injured or destroyed by a more slow exsiccation in air. Some plants indeed, particularly those of the acrid kind, as horse-radish, scurvy-grass, and arum, lose their virtues by this process, however carefully performed; but far the greater number retain them unimpaired, and often improved.

The thicker vegetable juices may be exsiccated by the heat of the sun; or, where this is not sufficient, by that of a water-bath, or an oven moderately warm. The thinner juices may be gently boiled till they begin to thicken, and then treated as the foregoing. The process termed *spissation*, or *evaporation*, has been spoken of already. The juices of some plants, as arum-root, briony-root, orris-root, wild cucumbers, &c. separate, on standing for some time, into a thick part which falls to the bottom; and a thin aqueous one which swims above it: this last is to be poured off, and the first exsiccated by a gentle warmth. Preparations of this kind have been usually called *secule*; that of the cucumber, to be spoken of in its place, is the only one which practice now retains.

Indissoluble bodies, mixed with water into a thick consistence, may be easily freed from the greatest part of it, by dropping them on a *chalk-stone*, or some powdered chalk pressed into a smooth mass, which readily imbibes their humidity. Where the quantity of fluid is large, as in the edulcoration of precipitates, it may be separated by decantation or filtration.

We observed before, that one of the principal circumstances favouring fermentation, was a certain degree of moisture. Exsiccation is therefore employed to dissipate humidity, and render vegetables thereby less liable to those changes produced by a kind of insensible fermentation.

SECT. IX.

COMMINATION.

COMMINATION is the bare reduction of solid coherent bodies into small particles or powder. The methods of effecting this are various, according to the texture of the subject.

Dry friable bodies, or such as are brittle and not very hard, and mixtures of these with somewhat moist ones, are easily *pulverised* in a mortar.

For very light dry substances, resins, and the roots of tenacious texture, the mortar may in some cases be previously rubbed with a little sweet oil, or a few drops of oil be occasionally added: this prevents the finer powder of the first from flying off. Camphor is commodiously powdered by rubbing it with a little rectified spirit of wine.

Tough substances, as woods, the peels of oranges and lemons, &c. are most conveniently *raised*; and soft oily bodies, as nutmegs, *grated*.

The comminution of the harder minerals, as calamine, crystal, flint &c. is greatly facilitated by *extension*; that is, by heating them red-hot

and quenching them in water : by repeating this process a few times, most of the hard stones become easily pulverisable. This process, however, is not to be applied to any of the alkaline or calcareous stones ; lest, instead of an insipid powder, we produce an acrimonious calx or lime.

Some metals, as tin, though strongly cohering in their natural state, prove extremely brittle when heated, inasmuch as to be easily divided into small particles by dexterous agitation. Hence the official method of pulverising tin, by melting it, and, at the instant of its beginning to return into a state of solidity, briskly shaking it in a wooden box. The comminution of metals, in this manner, is termed *granulation*.

On a similar principle, certain salts, as nitre, may be reduced into powder in large quantity, by dissolving them in boiling water, setting the solution over a moderate fire, and keeping the salt constantly stirring during its exsiccation, so as to prevent its particles, disjoined by the fluid, from reuniting together into larger masses.

Powders are reduced to a great degree of fineness by *trituration*, or rubbing them, for a length of time, in a mortar. Such as are not dissoluble in water, or injured by the admixture of that fluid, are moistened with it into the consistence of a paste, and *levigated* or ground on a flat smooth *marble* or *iron plate*, or, what is best, a porphyry ; or where a large quantity is to be prepared at a time, in *mills* made for that use.

Comminution, though one of the most simple operations of pharmacy, has, in many cases, very considerable effect. The resinous purgatives, when finely triturated, are more easily soluble in the animal fluids, and consequently prove more cathartic, and less irritating, than in their grosser state. Crude antimony, which, when reduced to a tolerable fine powder, discovers little medicinal virtue, if levigated to a great degree of subtilty, proves a powerful medicine in many chronic disorders.

By comminution, the heaviest bodies may be made to float in the lightest fluids, for a longer or shorter time, according to their greater or less degree of tenuity. Hence we are furnished with an excellent criterion of the fineness of certain powders, and a method of separating the more subtle parts from the grosser, distinguished by the name of *distillation*, or *washing over*.

S E C T. XII.

Fusion.

FUSION is the reduction of solid bodies into a state of fluidity by fire. Almost all natural substances, the pure earths and the solid parts of vegetables and animals excepted, melt in proper degrees of fire ; some in a very gentle heat, while others require its utmost violence.

Turpentine, and other soft resinous substances, *liquefy* in a gentle warmth ; wax, pitch, sulphur, and the mineral bitumens, require a heat too great for the hand to support : fixed alkaline salt, common salt, nitre, require a red, or almost white, heat to melt them ; and glass, a full white heat.

Among metallic substances, tin, bismuth, and lead, flow long before ignition ;

ignition : antimony likewise melts before it is visibly red-hot, but not before the vessel is considerably so : the regulus of antimony demands a much stronger fire. Zinc begins to melt in a red heat ; gold and silver require a low white heat ; copper, a bright white heat ; and iron, an extreme white heat.

One body, rendered fluid by heat, becomes sometimes a menstruum for another, not fusible of itself in the same degree of heat. Thus red-hot silver melts on being thrown into melted lead less hot than itself : and thus if steel, heated to whiteness, be taken out of the furnace, and applied to a roll of sulphur, the sulphur instantly liquefying, occasions the steel to melt with it ; hence the *chalybs cum sulphura* of the shops. This substance, nevertheless, remarkably impedes the fusion of some other metals, as lead : which when united with a certain quantity of sulphur requires a very strong fire for its fusion.

Sulphur is the only unmetallic substance which mixes in fusion with metals. Earthy, saline, and other like matters, even the calces and glasses prepared from metals themselves, float distinct upon the surface, and form what is called *scoria* or dross. Where the quantity of this is large in proportion to the metal, it is most commodiously separated by pouring the whole into a conical mould : the pure metal or *regulus*, though small in quantity occupies a considerable height of the lower narrow part of the cone : and when congealed, may be easily freed from the *scoria* by a hammer. The mould should be previously greased, or rather smoked, to make the metal come freely out : and thoroughly dried and heated, to prevent the explosion which sometimes happens from the sudden contact of melted metals with moist bodies.

S E C T. XIII.

CALCINATION.

By calcination is understood the reduction of solid bodies, by the means of fire, from a coherent to a powdery state, accompanied with a change of their quality ; in which last respect this process differs from comminution.

To this head belong the burning of vegetable and animal matters, otherwise called *usson*, *incineration*, or *concremation* ; and the change of metals into an earthy-like powder, which in the fire either does not melt, or *virrifies*, that is, runs into glass.

The metals which melt before ignition, are calcined by keeping them in fusion for some time. The free admission of air is essentially necessary to the success of this operation ; and hence, when the surface of the metal appears covered with calx, this must be taken off or raked to one side, otherwise the remainder excluded from the air will not undergo the change intended. If any coal, or unctuous inflammable matter be suffered to fall into the vessel, the effect expected from this operation will not be produced, and part of what is already calcined will be *revived* or *reduced* : that is, it will return into its original metallic state again.

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Those metals which require a strong fire for fusion, calcine with a much less heat than is sufficient to make them flow. Hence the burning or *scorification* of such iron or copper vessels as are long exposed to a considerable fire without defence from the air. Gold and silver are not calcinable except in a very strong degree of fire.

In calcination, the metals visibly emit fumes: nevertheless the weight of the calx proves greater than that of the metal employed.

The calcination of metallic bodies, gold, silver, and mercury excepted, is greatly promoted by nitre. This process is usually termed *desflagration*, or *detonation*.

All the metallic calces and scorizæ are revived into their metallic state by fusion with any vegetable or animal inflammable matter. They are all more difficult of fusion than the respective metals themselves; and scarcely any of them, those of antimony, lead, and bismuth excepted, can be made to melt at all, without some addition, in the strongest fire that can be produced in the common furnaces. The additions called *fluxes*, employed for promoting their fusion, consist chiefly of fixed alkaline salts. A mixture of alkaline salt with inflammable matter, as powdered charcoal, is called a *reducing flux*, as contributing at the same time to bring the calx into fusion, and to revive it into metal. Such a mixture is commonly prepared from one part of nitre, and two parts of tartar, by grinding them well together, setting the powders on fire with a bit of coal or red-hot iron, then covering the vessel, and suffering them to desflagrate or burn till they are changed into a black alkaline coally mass. This is the common reducing flux of the chemists, and is called from its colour the *black flux*. Metallic calces or scorizæ, mixed with twice their weight of this compound, and exposed to a proper fire in a close covered crucible, melt and resume their metallic form.

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P A R T II.

M A T E R I A M E D I C A.

THE MATERIA MEDICA comprehends all those substances, whether natural, or artificial, that are employed in medicine.

Much pains have been bestowed by the writers on the materia medica, in attempting to form useful arrangements of these articles. Some have arranged them according to their natural affinities; others according to their active constituent parts; and a third set, according to their real or supposed virtues. It must indeed be allowed, that some of these arrangements are not without considerable use, as throwing light upon the nature and qualities of particular articles; but no arrangement has yet been proposed which is not liable to numerous objections. Accordingly, in the Pharmacopœias published by the Colleges of Physicians both of London and Edinburgh, the articles of the materia medica are arranged in alphabetical order; and the same plan is also now adopted in almost every Pharmacopœia of estimation lately published on the continent of Europe. This plan, therefore, we shall here follow: subjoining to the name of each article which we think ought to enter such a list, a short view of its natural, medical, and pharmaceutical history.

ABEL-

ABELMOSCHUS [Brun.] Se-

mina.

Hibiscus Abelmosechus Linnæi.

Musk seed.

These seeds are the product of a plant indigenous in Egypt, and in many places both of the East and West Indies. They are of a small size, and reniform shape: they are very remarkable for possessing a peculiar and very fragrant odour; the smell which they give out may be compared to that of musk and amber conjoined: those brought from the island of Martinico are generally esteemed the most odorous, but we have seen some the product of hot-houses in Britain, which, in point of flavour, seemed not inferior to any imported from abroad.

These seeds, although introduced into some of the foreign pharmacopœias, have hitherto been principally, if not only, used as a perfume; and as their medicinal powers still remain to be ascertained, it is perhaps with propriety that hitherto no place has been given them in the list either of the London or Edinburgh Colleges. But their peculiar flavour, as well as other sensible qualities, point them out as a subject well deserving a particular investigation.

ABIES [Gen.] *Summitates coni.**Pinus Abies* & *Pinus sylvestris* Lin.

The common and the Scotch fir.

These are large evergreen trees, frequent in northern climates. Tho' they have now no place either in the London or Edinburgh Pharmacopœias, yet they stand in several of the foreign ones, and are employed for different purposes in medicine. They are indigenous in some parts of Britain, but are chiefly to be met with in plantations, where they grow with great luxu-

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riance. From these trees in different parts of Germany, the Strasbourg turpentine is extracted. The branches, and the fruit or cones, gathered about the end of autumn, abound with a resinous matter, and yield, on distillation, their essential oil, and a liquor impregnated with a peculiar acid. It has been styled *acidum abietis*; and when added to water, is thought to communicate to it both the taste and other properties of tar-water. The *acidum abietis* was frequently prescribed by the late Dr Hope in the Royal Infirmary of Edinburgh; and he thought that he found good effects from it in some instances of obstinate coughs, particularly in those cases of chronic catarrh, which are often benefited by diuretics. The wood and tops of the fir tree are sometimes employed under the form of decoction or infusion, with the view of promoting urine and sweat; and these formulæ have been thought serviceable in healing internal ulcerations, particularly those of the urinary passages.

Infusions of the spruce-fir are much employed in Canada, with a view both to the prevention and cure of genuine scorbutus. And we are told, that with these intentions they were found beneficial in the British army at Boston, when the scurvy prevailed in an alarming degree.

ABROTANUM [Lond.] *Foli-**um.* [Ed.] *Herba.**Artemisia Abrotanum* Lin.

Southernwood.

This is a shrubby plant, clothed with very finely divided leaves of a light green colour. The flowers, which are very small and yellowish, hang downwards, several together, from the middle of the branches to the

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the top. It is not, like some other species of the *artemisia*, indigenous in Britain; but though a native of warm climates, it readily bears the vicissitudes of ours, and is easily cultivated in gardens; from thence alone it is obtained when employed for medical purposes: the leaves fall off every winter, but the roots and stalks continue for many years.

Southernwood has a strong smell, which, to most people, is not disagreeable; it has a pungent, bitter, and somewhat nauseoustaste. These qualities are very completely extracted by rectified spirit, and the tincture thus formed is of a beautiful green colour. They are less perfectly extracted by watery liquors, the infusion being of a light brown colour.

Southernwood, as well as some other species of the same genus, particularly the *absinthium* and *fontanicum*, has been recommended as an anthelmintic; and it has also been sometimes used as a stimulant, detergent, and sudorific. It has likewise been employed externally in discutient and antiseptic fomentations. It has also been used under the form of lotion and ointment for cutaneous eruptions, and for preventing the hair from falling off. But although it still retains a place in the pharmacopœias both of London and Edinburgh, it does not enter any fixed formula in either of these works, and is at present very little employed in practice.

ABSINTHIUM MARITIMUM [*Lond.*] *Cacumen*.

Artemisia maritima Lin.

Sea-wormwood, the tops.

The leaves of sea-wormwood are much smaller than those of the common: they are hoary on the upper side as well as the lower; the

the stalks also are hoary all over. It grows wild about salt marshes, and several parts about the sea coasts.—In taste and smell it is weaker and less unpleasant than the common wormwood. The tops of sea wormwood formerly entered some of the compound distilled waters; but they are now rejected, and are very little employed in practice.

ABSINTHIUM VULGARE [*Lond.*] *herba*.

ABSINTHIUM [*Edin.*] *Simulacris florentes*.

Artemisia Absinthium Lin.

Common wormwood; the leaves and flowering tops.

The leaves of this sort of wormwood are divided into roundish segments, of a dull green colour above, and whitish underneath. It grows wild in several parts of Britain; about London, large quantities are cultivated for medicinal use; it flowers in June and July; and after having ripened its seeds, dies down to the ground, except a tuft of the lower leaves, which generally abides the winter.

Wormwood is a strong bitter; and was formerly much used as such against weakness of the stomach, and the like, in medicated wines and ales; but its use with these intentions, is exceptionable, on account of the ill relish and offensive smell with which it is accompanied. It may be freed from these qualities partly by keepings, and totally by long coction, the bitter remaining entire. An extract made by boiling the leaves in a large quantity of water, and evaporating the liquor, proves a bitter sufficiently grateful, without any disgusting flavour. This extract, which had formerly a place in the Edinburgh pharmacopœia, is still retained in some of the

the best foreign ones: but it is probably less active than the strong tincture now directed by the Edinburgh college.

ACACIA VERA [Brun.]

Mimosæ nilotica Lin.

Acacia is the inspissated juice of the unripe fruit of the same tree which produces the gum arabic.

This juice is brought to us from Egypt in roundish masses, wrapped up in thin bladders. It is outwardly of a deep brown colour, inclining to black; inwardly of a reddish or yellowish brown; of a firm consistence but not very dry. It soon softens in the mouth, and discovers a rough, not disagreeable taste, which is followed by a sweetish relish. This inspissated juice entirely dissolves in watery liquors; but rectified spirit of wine scarcely produces any effect on it.

Acacia is a mild astringent medicine. The Egyptians give it in spitting of blood, to the quantity of a drachm, dissolved in any convenient liquor; and repeat this dose occasionally: they likewise employ it in collyria for strengthening the eyes, and in gargarisms for quinseys. Among us it is little used, and is rarely met with in the shops. What is usually sold for the Egyptian acacia, is the inspissated juice of unripe sloes: this is harder, heavier, of a darker colour, and somewhat sharper taste, than the true sort. In several pharmacopœias, as in the Suecica, and Genevensis, this inspissated sloe juice has a place under the title of *Acacia Nostræ*.

ACETOSA [Lond.] *Folium*.

[*Edin.*] *Folia*.

Rumex Acetosa Lin.

Sorrel; the leaf.

Sorrel grows wild in fields and meadows throughout Britain. The leaves have a restraining acid taste, without any smell or particular flavour: their medical effects are, to cool, quench thirst, and promote the urinary discharge: a decoction of them in whey affords an useful and agreeable drink in febrile or inflammatory disorders: and is recommended by Boerhaave to be used in the spring as one of the most efficacious aperients and detergents. Some kinds of scurvy have yielded to the continued use of this medicine: the Greenlanders, who are very subject to this distemper, are said to employ with good success a mixture of the juices of sorrel and of scurvy-grass.

The roots of sorrel have a bitterish austere taste, without any acidity: they are said to be deobstruent and diuretic. They had formerly a place in the Edinburgh pharmacopœia, but are now rejected from it. They are still, however, retained in the pharmacopœia Suecica, and some other of the best foreign ones: but they have little other effect than of giving a reddish colour to the articles with which they are combined.

The seeds of this plant were formerly used in diarrœas and dysenteries; but have long been strangers to the shops, and are now justly expunged both from the London and Edinburgh pharmacopœias, and indeed from most of the foreign ones. They have no remarkable smell, and scarcely any taste.

ACETUM VINI [*Ed.*]

Vinegar; an acid produced from fermented vinous liquors by a second fermentation.

Wine vinegar is considerably purer

rer than that prepared from malt liquors; the latter, however acid and fine, contains a large portion of a viscous mucilaginous substance; as is evident from the ropiness and sliminess to which this kind of vinegar is very much subjected; the stronger and more spirituous the wine, the better and stronger vinegar it yields. The French vinegars are said by Geoffrey to saturate above one thirty-fifth of their weight of fixed alkaline salt, and some of them no less than one-twelfth; the best of the German vinegars little more than one-fortieth.

Vinegar is a medicine of excellent use in all kinds of inflammatory and putrid disorders, either internal or external: in ardent, bilious fevers, pestilential and other malignant distempers, it is recommended by Boerhaave as one of the most certain sudorifics. Weakness, fainting, vomiting, hiccup, hysterical and hypochondriacal complaints, have been frequently relieved by vinegar applied to the mouth and nose, or received into the stomach. It has been used internally in rabies canina. It is often usefully employed as a powerful menstruum for extracting the virtues of other articles.

ACIDUM VITRIOLICUM.

[*Lond. Ed.*]

Vitriolic acid.

This is inserted in the *Materia Medica* on account of its being generally made, not by the apothecary, but by the trading chemist, and most commonly from sulphur. The operation is performed in leaden vessels, sometimes 20 feet high and 10 broad; with an eighth part of nitre to supply the absence of the external air, and some water to condense the steams. It is concen-

trated and considerably purified by evaporation. It is then colourless, without smell, extremely corrosive, very fixed, and the most ponderous of all unmetallic fluids. Its specific gravity, according to both the *London* and *Edinburgh Colleges*, should be to that of distilled water as 185 to 100. It powerfully attracts water from the air, and in uniting with water produces a great degree of heat. It possesses the general properties of acids in a eminent degree.

On account of its fluidity, it is not used as a corrosive. Blended with unctuous matter in the proportion of one to eight, it is applied in itch and other chronic eruptions, and likewise as a rubefacient in local palsy and rheumatism. Diluted with water, it shews considerable action on the human calculus out of the body; and therefore has been proposed internally in that disease, particularly where surgical operation is improper. As checking fermentation, as well as being astringent and tonic, it is much used in morbid acidity, relaxations and weakness of the stomach. Its effects are propagated over the system; and hence its established use in passive hæmorrhages, gleet, and fevers of the typhous kind. It is also used internally in itch and other chronic eruptions; and when given to nurses having the itch, it is said to cure both themselves and their children. As combined with ardent spirit, with different metallic substances, &c. it enters several articles to be mentioned afterwards.

ACONITUM [*Lond.*] *Herb.*
[*Ed.*] *Folia.*

Aconitum Napellus *Lin.*

Large blue Wolfsbane, or Monk's-hood; the herb and leaves.

This

This is a perennial plant, growing naturally in various mountainous parts of Europe. The juice has a disagreeable smell and an acrid taste, becoming less acrid on inspissation. It has long been considered as one of the most active of the vegetable poisons, and when taken to any considerable extent, it occasions sickness, vomiting, purging, vertigo, delirium, fainting, cold sweats, convulsions, and even death. Dr Stoerk of Vienna was probably the first who employed it for medical purposes; and he recommended it to the attention of other practitioners, in a treatise published in 1762. He represents it as a very effectual remedy in glandular swellings, venereal nodes, anchylosis, spina ventosa, itch, amaurosis, gouty and rheumatic pains, intermittent fevers, and convulsive disorders. Stoerk's formula was two grains of the inspissated juice rubbed down with two drachms of sugar. He began with ten grains of this powder night and morning, and increased it gradually to six grains of the inspissated juice twice a day. Others have used a tincture made of one part of the dry leaf, and six parts of spirit of wine, in the dose of forty drops. But although the aconitum has now a place in the Pharmacopœias both of the London and Edinburgh Colleges, and likewise in most of the other modern Pharmacopœias, yet it has by no means answered those expectations which might have been formed from Dr Stoerk's account. It is, however, unquestionably a very active, and in some cases an useful article.

ACORUS, see CALAMUS AROMATICUS.

ERUGO [Ed] Verdegriis.

This is a preparation of copper,

made chiefly at Montpellier in France, by stratifying copper plates with grape stalks that have been impregnated with a fermented vegetable acid: in a few days, the plates are found covered with a pale green downy matter, which is scraped off from the copper, and the process again repeated. The appellation therefore of Cuprum acetatum gives a proper idea of its constituent parts.

Verdegriis, as it comes to us, is generally mixed with stalks of the grape; they may be separated, in pulverization, by discontinuing the operation as soon as what remains seems to be almost entirely composed of them.

Verdegriis is never or rarely used internally. Some writers highly extol it as an emetic, and say, that a grain or two being taken acts as soon as received into the stomach; but its use has been too often followed by dangerous consequences to allow of its employment. Verdegriis applied externally, proves a gentle detergent and escharotic, and serves to take down fungous flesh arising in wounds. With these intentions it is an ingredient in different officinal compositions.

AGARICUS [Ed]

Boletus igniarius Lin.

Female agaric, or agaric of the oak, called, from its being very easily inflammable, Touchwood, or Spunk.

This fungus is frequently met with, on different kinds of trees, in England; and is said to have been sometimes brought into the shops mixt with the true agaric of the larch: from this it is easily distinguishable by its greater weight, dusky colour, and mucilaginous taste void of bitterness. The medullary part of this fungus, beaten

beaten soft, and applied externally, has been much celebrated as a styptic; and said to restrain not only venal but arterial hæmorrhagies, without the use of ligatures. It does not appear, however, to have any real styptic power, or to act any otherwise than dry lint, sponge, or other soft fungous applications.

AGRIMONIA [*Ros.*] *Herba.* *Agrimonia Eupatoria* Lin.

Agrimony; the plant.

This is a common plant in hedges and the borders of fields. The leaves have an herbaceous, somewhat acrid, roughish taste, accompanied with an aromatic flavour. Agrimony was supposed to be aperient, detergent, and to strengthen the tone of the viscera; hence it has been recommended in scorbutic disorders, in debility and laxity of the intestines, &c. Digested in whey, it affords a diet-drink, grateful to the palate and stomach. It is very little employed by regular practitioners, and has no place in the list either of the London or Edinburgh Colleges.

ALCHEMILLA [*Brun.*] *Folia* *Alchemilla vulgaris* Lin.

Ladies mantle; the leaves.

This plant grows wild in many parts of England: the leaves seem as if plaited or folded together, so as to have given occasion to the English name of the plant. The leaves of the alchemilla discover to the taste a moderate astringency, and were formerly much esteemed in some female weaknesses and in fluxes of the belly. They are now rarely used; though both the leaves and roots might doubtless be of service in cases where mild astringents are required.

ALKEKENGII [*Brun.*] *Bacca.* *Physalis Alkekengi* Lin.

Winter cherry; the berries.

This is a low, branched shrub, with leaves like those of nightshade; and white flowers, which stand single at the joints. The flower cup changes into a membranous cover, which at length bursts and discovers a fruit of a fine red colour, about the size of a common cherry. The fruit ripens in October, and continues frequently to the middle of December. This plant grows wild in some parts of France, Germany, &c. the beauty and lateness of its fruit have gained it a place in our gardens.

Winter cherries have in general been represented by most writers to be extremely bitter; but, as Haller justly observes, the cherry itself, if carefully freed from the cover (which is very bitter and pungent), has merely a subacil taste. They were formerly highly recommended as detergent, aperient, diuretic, and for expelling gravel; four, five, or more of the cherries are directed for a dose, or an ounce of the expressed juice. Mr Ray tells us of a gouty person who was cured and kept free from returns of this disorder, by taking eight of these cherries at each change of the moon; they occasioned a copious discharge of extremely fetid urine.

They have not, however, supported this character with others; inasmuch that they have now no place either in the London or Edinburgh Pharmacopœias, and are very little employed by any British practitioner.

ALLIARIA [*Brun.*] *Herba.* *Erythrum Allaria* Lin.

Saucesalone, or juck-by-the-hedge; the plant.

This

This plant is common in hedges and shady waste places, flowering in May and June. The leaves have a bitterish acid taste; and, when rubbed between the fingers, emit a strong smell, approaching to that of garlic. They have been recommended internally, as sudorifics and debilitrants, somewhat of the nature of garlic, but much milder; and externally, as antiseptics in gangrenes and cancerous ulcers. Hil-danus used to gather the herb for these last purposes in the spring, and expose it for a day to the action of a dry air in a shady place; being then committed to the press, it yielded a juice possessing the smell and taste of the allaria: this, he informs us, with a little oil on the surface, keeps in perfection for years: whereas the herb in substance soon loses its virtues in keeping. At present it is very little employed either in medicine or surgery.

ALLIUM [Lond. Ed.] radix.

Allium sativum Lin.

Garlick; the root.

These roots are of the bulbous kind, of an irregularly roundish shape, with several fibres at the bottom: each root is composed of a number of lesser bulbs, called cloves of garlick, inclosed in one common membranous coat, and easily separable from each other. All the parts of this plant, but more especially the roots, have a strong offensive smell, and an acrimonious almost caustic taste. The root applied to the skin inflames, and often exulcerates the part. Its smell is extremely penetrating and diffusive; when the root is applied to the feet, its scent is soon discoverable in the breath; and taken internally, its smell is communicated to the urine, or the matter of an

issue, and perspires through the pores of the skin.

This pungent root stimulates the whole body. Hence in cold leucophlegmatic habits it proves a powerful expectorant, diuretic, and if the patient be kept warm, sudorific; it has also been supposed to be emenagogue. In catarrhus disorders of the breast, flatulent cholics, hysterical, and other diseases proceeding from laxity of the solids, it has generally good effects: it has likewise been found serviceable in some hydropic cases. Sydenham relates that he has known the dropsy cured by the use of garlick alone; he recommends it chiefly as a warm strengthening medicine in the beginning of the disease.

Garlick is also a favourite remedy in the cure of intermittents; and it has been said to have sometimes succeeded in obstinate quartans, after the Peruvian bark had failed, particularly when taken to the extent of one or two cloves daily in a glass of brandy or other spirits.

The liberal use of garlick is apt to occasion headachs, flatulencies, thirst, febrile heats, inflammations, dysenteries, and sometimes discharges of blood from the hæmorrhoidal vessels. In hot bilious constitutions, where there is already a degree of irritation, and where there is reason to suspect an unsound state of the viscera, this stimulating medicine is manifestly improper, and never fails to aggravate the distemper.

The most commodious form for taking garlick, a medicine to most people not a little unpleasant, is that of a bolus or pill. Infusions in spirit, wine, vinegar, and water, although containing the whole of its

its virtues are so acrimonious, as to be unfit for general use. A syrup and oxymel of it were formerly kept in the shops: but it does not now enter any official preparation in our pharmacopœias; and it is proper that even the pills should always be an extemporaneous prescription, as they suffer much from keeping.

Garlick made into an ointment with oils, &c. and applied externally, is said to resolve and disperse cold tumors, and has been greatly esteemed in cutaneous diseases. It has likewise been sometimes employed as a repellent. When applied in the form of a poultice to the pubis, it has sometimes proved effectual in producing a discharge of urine, when retention has arisen from a want of due action of the bladder; and some authors have recommended, in certain cases of deafness, the introduction of a single clove, wrapt in thin muslin or gauze, into the meatus auditorius. Sydenham assures us, that among all the substances which occasion a derivation or revulsion from the head, none operates more powerfully than garlick applied to the soles of the feet: hence he was led to use it in the confluent small pox: about the eighth day after the face began to swell, the root cut in pieces, and tied in a linen cloth, was applied to the soles of the feet, and renewed once a day till all danger was over.

ALNUS [*Ros.*] *Folia, Cortex.*
Betula Alnus Lin.

The leaves and bark of the elder tree.

They have a bitter styptic disagreeable taste. The bark is recommended in intermittent fevers; and a decoction of it, in gargarisms,

for inflammations of the tonsils; but it is little employed in modern practice.

ALOE [*Lon.* *Ed*]

Aloe perfoliata Lin.

Aloes.

Aloe is the inspissated juice of certain plants of the same name. The antients distinguished two sorts of aloes: the one was pure and of a yellowish colour inclining to a red, resembling the colour of a liver, and thence named hepatic, the other was full of impurities, and hence supposed to be only the drofs of the better kind. At present, various sorts are met with in the shops; which are distinguished either from the places, whence they are brought, from the species of the plants, or from some differences in the juices themselves. Three different kinds may be mentioned, although two of them have only now a place in our pharmacopœias.

(1.) **ALOE SOCOTORINA** [*Lon.* *Ed.*]

Socotorine aloes.

This article is brought from the island Socotora in the Indian ocean, wrapt in skins; it is obtained from the variety of *Aloe perfoliata* Lin. This sort is the purest of the three: it is of a glossy surface, clear, and in some degree pellucid: in the lump, of a yellowish red colour, with a purple cast; when reduced to powder of a bright golden colour. It is hard and friable in the winter, somewhat pliable in summer, and grows soft between the fingers. Its taste is bitter, accompanied with an aromatic flavour, but insufficient to prevent its being disagreeable; the smell is not very unpleasant, and somewhat resembles that of myrrh.

(2.)

(2.) ALOE BARBADENSIS

[*Lond*] HEPATICA [*Ed*]

Barbadoes, or hepatic aloes.

Hepatic aloes is not so clear and bright as the foregoing sort: it is also of a darker colour, more compact texture, and for the most part drier. Its smell is much stronger and more disagreeable: the taste intensely bitter and nauseous, with little or nothing of the fine aromatic flavour of the Socotorine. The best hepatic aloes come from Barbadoes in large gourd shells; an inferior sort of it (which is generally soft and clammy) is brought over in casks.

(3.) ALOE CABALLINA.

Fetid, caballine or horse aloes.

This sort is easily distinguished from both the foregoing, by its strong rank smell: although, in other respects, it agrees pretty much with the hepatic, and is not unfrequently fold in its stead. Sometimes the caballine aloes is prepared so pure and bright, as not to be distinguishable by the eye even from the Socotorine: but its offensive smell, of which it cannot be divested, readily betrays it. It has not now a place in the list of almost any modern pharmacopœia, and is employed chiefly by farriers.

All the sorts of aloes dissolve in pure spirit. proof spirit, and proof spirit diluted with half its weight of water; the impurities only being left. They dissolve also by the assistance of heat in water alone; but as the liquor cools, the resinous part subsides, the gummy remaining united with the water. The hepatic aloes is found to contain more resin and less gum than the Socotorine, and this than the caballine. The resins of all the sorts, purified by spirit of wine, M

have little smell: that obtained from the Socotorine has scarce any perceptible taste; that of the hepatic, a slight bitterish relish; and the resin of the caballine, a little more of the aloetic flavour. The gummy extracts of all the sorts are less disagreeable than the crude aloes: the extract of Socotorine aloes has very little smell, and is in taste not unpleasant; that of the hepatic has a somewhat stronger smell, but is rather more agreeable in taste than the extract of the Socotorine; the gum of the caballine retains a considerable share of the peculiar rank smell of this sort of aloes, but its taste is not much more unpleasant than that of the extracts made from the two other sorts.

Aloes is a stimulating bitter cathartic; if given in so large a dose as to purge effectually, it often occasions an irritation about the anus, and sometimes a discharge of blood. Small doses of it frequently repeated, not only cleanse the primæ viæ, but likewise warm the habit, quicken the circulation, and promote the uterine and hæmorrhoidal fluxes. This medicine is particularly serviceable in habitual costiveness, to persons of a phlegmatic temperament and sedentary life, and where the stomach is oppressed and weakened: in dry bilious habits aloes proves injurious, immoderately heating the body, and inflaming the bowels.

The juice is likewise, on account of its bitterness, supposed to kill worms, either taken internally, or applied in plasters to the umbilical region. It is also celebrated for restraining external hæmorrhages, and cleansing and healing wounds and ulcers.

The antients gave aloes in much larger doses than is customary at present.

present. Dioscorides orders half a drachm or a drachm for gently loosening the belly: and three drachms when intended to have the full effect of a cathartic. But modern practice rarely exceeds a scruple, and limits the greatest doses to two scruples. For the common purposes of this medicine, ten or twelve grains suffice: taken in these or less quantities, it acts as a general stimulating eccoprotic, capable of removing, if duly continued, very obstinate obstructions.

Aloes are much less frequently used to operate as a purgative than merely to obviate costiveness: and indeed their purgative effect is not increased in proportion to the quantity that is taken. Perhaps the chief objection to aloes, in cases of habitual costiveness, is the tendency which they have to induce and augment hæmorrhoidal affections. And with those, liable to such complaints, they can seldom be employed. Their purgative effect seems chiefly to depend on their proving a stimulus to the rectum.

Some authors are of opinion, that the purgative virtue of aloes resides entirely in its resin: but experience has shewn, that the pure resin has little or no purgative quality; and that the gummy part separated from the resinous acts more powerfully than the crude aloes. If the aloes indeed be made to undergo long coction in the preparation of the gummy extracts, its cathartic powers will be considerably lessened, not from the separation of the resin, but from an alteration made in the juice itself by the heat. The strongest vegetable cathartics become mild by a like treatment, without any remarkable separation of their parts.

Socotorine aloes, as already observed, contain more gummy mat-

ter than the hepatic; and hence are likewise found to purge more and with greater irritation. The first sort, therefore, is most proper where a stimulus is required, as for promoting or exciting the menstrual flux; while the latter is better calculated to act as a common purge. It is supposed that the vulnerary and balsamic virtues of this juice reside chiefly in the resin; and hence that the hepatic aloes, which is most resinous, is most serviceable in external applications.

Aloes enter many of the official preparations and compositions, especially different pills and tinctures. And according to the peculiar purposes for which these are intended, sometimes the Barbadoes, sometimes the Socotorine aloes, are the most proper.

ALTHÆA [Lond. Ed.] *Radix, folium.*

Althea officinalis Lin.

Marsh mallows. The leaf and root.

Though this plant grows spontaneously in marshes, and other moist places, in several parts of England, it is frequently cultivated for medicinal use. All the parts of it have a slimy taste, and abound with a soft mucilaginous substance, which is readily extracted by water; the mucilage of the roots appears to be the strongest; and hence this part is generally used in preference to the others.

This plant has the general virtues of an emollient medicine; and proves serviceable where the natural mucus of the intestines is abraded. It is chiefly recommended in sharp disfluxions upon the lungs, hoarseness, dysenteries, and likewise in nephritic and calculous complaints; not, as has been supposed, that this

this medicine has any peculiar power of dissolving or expelling the calculus; but as by lubricating and relaxing the vessels it procures a more free and easy passage. Althæa root is sometimes employed externally for softening and maturing hard tumors: chewed, it is said, to give ease in difficult dentitions of children.

ALUMEN [Lond. Ed.]

Alum.

Alum is a salt artificially produced from certain minerals, by calcining and exposing them to the air; after which the alum is elixated by means of water. The largest quantities are prepared in England, Germany, and Italy.

This salt is of a white or pale red colour, of an austere styptic taste, accompanied with a nauseous sweetness. It dissolves in about twelve times its weight of water; and concretes again, upon duly evaporating the solution, into semitransparent crystals of an octagonal figure. Exposed to the fire, it easily melts, bubbles up in blisters, emits a copious phlegm, and then turns into a light spongy white mass, considerably more acid than the alum was at first; this urged with a stronger fire, yields vitriolic acid; the part which remains, if the heat has been sufficiently intense and long continued, is an insipid white earth.

Solutions of alum coagulate milk, change the blue colour of vegetable juices into a red or purple, and turn an infusion of galls turbid and whitish. Upon adding fixt alkaline salts to these solutions, the earth of the alum is precipitated with the colouring matter of the vegetable, and its acid uniting to the fixt alkali forms a neutral salt.

Alum is a powerful astringent:

it is reckoned particularly serviceable for restraining hæmorrhagies, and immoderate secretions from the blood; but less proper in intestinal fluxes. In violent hæmorrhagies, it may be given in doses of fifteen or twenty grains, and repeated every hour or half hour till the bleeding abates: in other cases, smaller doses are more advisable; large ones being apt to nauseate the stomach, and occasion violent constrictions of the bowels. It is used also externally, in astringent and repellent lotions and collyria. Burnt alum taken internally has been highly extolled in cases of colic. In such instances, when taken to the extent of a scruple for a dose, it has been said gently to move the belly, and give very great relief from the severe pain.

AMBRAGRISÆ [Dan.]

Ambra ambrosiaca Lin.

Ambergris.

Ambergris is a bituminous substance of a greyish or ash colour, intermixed with yellowish and blackish specks or veins; it is usually met with in little opaque rugged masses, very light, of a loose texture, friable in a certain degree like wax; they break rough and uneven, and not unfrequently contain pieces of shells, bones of fishes, and other like matters. This concrete is found floating on the surface of the sea, or thrown on the shores; the greatest quantities are met with in the Indian ocean; pieces have likewise been now and then discovered in our own and other northern seas. It is supposed to be an animal product, from its being so frequently found in the belly of the *physeter macrocephalus* Lin.

Pur: ambergris softens between the

the fingers; melts in a small degree of heat into the appearance of oil, and in a stronger heat proves almost totally volatile. Warmed a little, it emits a peculiar fragrant smell; set on fire, it smells like burning amber. It dissolves, though diffcultly, in spirit of wine and essential oils; but not in expressed oils or in water.

Ambergris is in general the most agreeable of the perfumes, and rarely accompanied with the inconveniencies which other substances of this class frequently occasion. It has been considered as an high cordial, and esteemed of great service in all disorders of the head, and in nervous complaints; a solution of it in a spirit distilled from roses, stands recommended by Hoffman as one of the most efficacious corroborants of the nervous system. The Oriental's entertain an high opinion of the aphrodisiac virtues of this concrete; they likewise suppose that the frequent use of it conduces to long life: But it is now very little employed in practice, and has no place either in the London or Edinburgh Pharmacopœias; yet its sensible qualities give reason for believing that it may be a more active medicine than some articles which are retained; although credit is by no means to be paid to all that has been said with regard to it.

AMMONIA. See, SAL AMMONIACUS, SAL CORNU CERVI.

AMMONIACUM, GUMMI RESINA [*Lond. Ed.*]

Ammoniacum, the gum resin.

Ammoniacum is a concrete gummy resinous juice, brought from the East Indies, usually in large masses, composed of little lumps or tears of a milky colour, but soon

changing, by being exposed to the air, of a yellowish hue. We have no certain account of the plant which affords this juice: the seeds usually found among the tears resemble those of the umbelliferous class. It has however, been alleged, and not without some degree of probability, that it is an exudation from a species of the ferula, another species of which produces the asafœtida. The plant producing it is said to grow in Nubia, Abyssinia, and the interior parts of Egypt. Such tears are large, dry, free from little stones, seeds, or other impurities, should be picked out and preserved for internal use, the coarser kind is purified by solution, colature, and inspissation; unless this be artfully managed, the gum will lose a considerable portion of its more volatile parts. There is often vendid in the shops, under the name of strained gum ammoniacum, a composition of ingredients much inferior in virtue.

Ammoniacum has a nauseous sweet taste, followed by a bitter one; and a peculiar smell, somewhat like that of galbanum, but more grateful: it softens in the mouth, and grows of a white colour by being chewed. Thrown on live coals, it burns away in flame: it is in some degree soluble in water and in vinegar, with which it assumes the appearance of milk; but the resinous parts amounting to about one-half, subside on standing.

Ammoniacum is an useful decoction; and it is frequently prescribed for opening obstructions of the abdominal viscera, and in hysterical disorders occasioned by a deficiency of the menstrual evacuations. It is likewise supposed to act on the pulmonary vessels, and to prove of considerable service

in some kinds of asthma, where the lungs are oppressed by viscid phlegm: with this intention, a solution of gum ammoniacum in vinegar of squills, though not a little unpleasant, proves a medicine of great efficacy. In long and obstinate colics this gummy resin has produced happy effects, after purges and the common carminatives had been used in vain. Ammoniacum is most commodiously taken in the form of pills: about a scruple may be given every night, or oftener. Externally, it is supposed to soften and ripen hard tumours: a solution of it in vinegar stands recommended for resolving even scirrhus swellings. A plaster made of it and squill-vinegar, is recommended in white swellings. A dilute mixture of it is likewise rubbed on the parts, which are also fumigated with smoke of juniper berries.

AMYGDALA AMARA,

DULCIS (*Lond. Ed.*) *Nucleus.*

Amygdalis communis Lin.

Bitter and sweet almond. The kernel.

The almond is a flattish kernel, of a white colour, covered with a thin brownish skin; of a soft sweet taste, or a disagreeable bitter-one. The skins of both sorts are unpleasant, and covered with an acrid powdery substance; they are very apt to become rancid on keeping, and to be preyed on by a kind of insect, which eats out the internal part, leaving the almond to appearance entire. To these circumstances regard ought to be had in the choice of them.

They are the produce of a species of peach tree; and the eye distinguishes no difference between the trees which produce the sweet and bitter, or between the kernels

themselves; it is said that the same tree has, by a difference in culture, afforded both.

Both sorts of almonds yield, on expression, a large quantity of oil, which has no smell or any particular taste; this oil separates likewise on boiling the almonds in water, and is gradually collected on the surface: but on triturating the almonds with water, the oil and water unite together, by the mediation of the other matter of the kernel, and form an unctuous milky liquor.

Sweet almonds are of greater use in food than as medicines, but they are reckoned to afford little nourishment; and when eaten in substance, are not easy of digestion, unless thoroughly comminuted. They are supposed, on account of their soft unctuous quality, to obtund acrimonious juices in the priæ viz: peeled sweet almonds, eaten six or eight at a time, sometimes give speedy relief in the heartburn.

Bitter almonds have been found poisonous to dogs and sundry other animals; and a water distilled from them when made of a certain degree of strength, has the same effects. Nevertheless, when eaten, they appear innocent to men, and have been frequently used as medicines. Boerhaave recommends them in substance, as diuretics which heat but moderately, and which may, therefore be ventured on in acute diseases.

The oils obtained by expression from both sorts of almonds are in their sensible qualities the same. The general virtues of these oils are, to blunt acrimonious humours, and to soften and relax the solids: hence their use internally, in tickling coughs, heat of urine, pains and inflammations; and externally, in

in tension and rigidity of particular parts.

The milky solutions of almonds in watery liquors, commonly called emulsions, contain the oil of the subject, and participate in some degree of its emollient virtue; but have this advantage above the pure oil, that they may be given in acute or inflammatory disorders, without danger of the ill effects which the oil might sometimes produce; since emulsions do not turn rancid or acrimonious by heat as all the oils of this kind in a little time do. Several unctuous and resinous substances, of themselves not miscible with water, may by trituration with almonds be easily mixed with it into the form of an emulsion; and are thus excellently fitted for medicinal use. In this form camphor and the resinous purgatives may be commodiously taken. The only official preparations of almonds are, the expressed oil and emulsion. The oil is chiefly expressed from the bitter almond as being cheaper, but the emulsion is made with the sweet almond. An emulsion formed entirely of bitter almonds, taken to the quantity of a pint or two daily, is said to have been given in obstinate intermittents with success.

AMYLUM [Edm.] *Ex tritico preparatum.*

Starch a preparation from wheat. See TRITICUM.

ANCHUSA [Ed.] *Radix.*

Anchusa tinctoria Lin.

Alkanet root.

Alkanet is a rough hairy plant, much resembling the viper's bug-loss: its chief difference from the common buglosses consists in the colour of its roots: the cortical part of which is of a dusky red,

and imparts an elegant deep red to oils, wax, and all unctuous substances, but not to watery liquors. This plant is a native of Europe: it is sometimes cultivated in our gardens; but the greatest quantities are raised in Germany or France, particularly about Montpellier, from whence the dried roots are usually imported to us. The alkanet root produced in England is much inferior in colour to that brought from abroad; the English being only lightly reddish, the others of a deep purplish red: and it has been suspected, but without sufficient foundation, that the foreign roots owe part of their colour to art.

Alkanet root has little or no smell; when recent, it has a bitterish astrigent taste; but when dried, scarcely any. As to its virtues, the present practice expects not any from it. Its chief use is for colouring oils, ointments, and plasters. As the colour is confined to the cortical part, the small roots are best, having proportionally more bark than the large.

ANETHUM [Lond. Ed.] *Se-men.*

Anethum graveolens Lin.

Dill, the seed.

Dill is an umbelliferous plant, cultivated in gardens, as well for culinary as medical use. The seeds are of a pale yellowish colour, in shape nearly oval, convex on one side and flat on the other. Their taste is moderately warm and pungent; their smell aromatic, but not of the most agreeable kind. These seeds are recommended as a carminative in flatulent cholics. The most efficacious preparations of them are, the distilled oil, and a tincture or extract made with rectified spirit. A simple distilled water

water prepared from these seeds has a place both in the London and Edinburgh Pharmacopœias.

ANGELICA [*Lon. Ed.*] *Radicis, caulis, folium, semen.*

Angelica Archangelica Lin.

Angelica the root, stalk, leaf, and seed.

It is a large umbelliferous plant, growing spontaneously in the northern climates: for the use of the shops, it is cultivated in gardens in different parts of Europe. Angelica roots are apt to grow mouldy, and to be preyed on by insects, unless thoroughly dried, kept in a dry place, and frequently aired. We apprehend, that the roots which are subject to this inconvenience might be preserved, by dipping them in boiling spirit, or exposing them to its steam, after they are dried.

All the parts of angelica, especially the roots, have a fragrant aromatic smell; and a pleasant bitterish warm taste, glowing upon the lips and palate for a long time after they have been chewed. The flavour of the seeds and leaves is very perishable; particularly that of the latter, which, on being barely dried, lose the greatest part of their taste and smell: the roots are more tenacious of their flavour, though they lose part of it with keeping. The fresh root, wounded early in the spring, yields an odorous, yellow juice; which, slowly exsiccated, proves an elegant gummy resin, very rich in the virtues of the angelica. On drying the root, this juice concretes into distinct moieties, which, on cutting it longitudinally, appear distributed in little veins; in this state, they are extracted by pure spirit, but not by watery liquors.

Angelica is one of the most elegant aromatics of European growth, though little regarded in the present practice. The root, which is the most efficacious part, is used in the aromatic tincture. The stalks make an agreeable sweetmeat.

Besides the angelica archangelica, or garden-angelica, as it is commonly called, the Edinburgh College still also give a place to the root of the angelica sylvestris, or wild angelica. But it seems to differ only from the former in being much weaker, and might with propriety be rejected.

ANGUSTURA [*Edin.*] *Cortex.*

Angustura bark.

The natural history of this bark is hitherto unknown. The first parcel of it that was imported came from Dominica in July 1788, with an account "that it had been found superior to the Peruvian bark in the cure of fevers." Subsequent importations from the Spanish West Indies, either immediately or through the medium of Spain, give reason to suppose that it is the produce of South America. Angostura is the Spanish term for a narrow pass between two mountains. This also corroborates the supposition.

Its appearance is various, owing to its having been taken from larger or smaller branches. The outer surface of it is more or less wrinkled, and covered with a greyish coat, below which it is of a yellowish brown: the inner surface is of a dull brown. It breaks short and resinous. The taste is intensely bitter and slightly aromatic, leaving a strong sense of heat and pungency in the throat and fauces. The odour is singular.

Water either cold or warm, extracts

tracts the bitter quality; and spirit, the aromatic and acrid part of this bark; and the bark when triturated with quicklime or with fixed alkali gives out an odour of volatile alkali; an infusion of the bark is not changed by vitriolated iron.

As being an aromatic bitter it has been found to be a strengthener and stimulant of the organs of digestion. It increases the appetite for food; removes flatulencies and acidity in consequence of dyspepsia. It is found to have no astringent power, but by its strengthening quality it is very effectual in diarrhoea from weakness of the bowels and in dysenteries. It is found ineffectual in the cure of intermittents. Future observations and farther trials of this new Bark, may, we hope, lead to a more perfect knowledge of its medicinal powers.

ANISUM [Lond Ed.] Semen.

Pimpinella Anisum Lin.

Anise, the seed.

Anise is an annual umbelliferous plant, growing naturally in Crete, Syria, and other places of the east. It is cultivated in some parts of France, Germany, and Spain, and may be raised also in England; the seeds brought from Spain, which are smaller than the other, are preferred.

Aniseeds have an aromatic smell, and a pleasant warm taste, accompanied with a degree of sweetness. Water extracts very little of their flavour; rectified spirit the whole.

The principal use of these seeds is in flatulent disorders, and in the grapes to which young children are subject. Frederick Hoffman strongly recommends them in weakness of the stomach, diarrhoeas, and for strengthening the tone of the viscera in general; and thinks they well deserve the appellation

given them by Helmont, *iniefsum rum solamen*.

There were formerly several officinal preparations of these seeds, but the only one now retained is an essential oil.

ANTIMONIUM [Lond. Ed.]

Stibium *see Antimonium fulguratum*.

Antimony.

Antimony is a ponderous brittle mineral composed of long shining streaks like needles, mixed with a dark lead-coloured substance; of no manifest taste or smell. There are several mines of it in Germany, Hungary, and France: and some likewise in England. The English seems to be of all these the least proper for medicinal use, as frequently containing a portion of lead. The substances found mixed with the foreign sorts are generally of the infusible stony kind, from which the antimony is melted out in vessels whose bottom is perforated with small holes, and received in conical moulds; in these, the lighter and more dressy matter arises to the surface; while the more pure and ponderous subsides to the bottom; hence the upper broad part of the loaves is considerably less pure than the lower.

The goodness of antimony is judged of from its weight; from the loaves not being spongy or blebby; from the largeness of the striæ; and from the antimony totally evaporating in a strong fire.

Antimony was employed by the ancients, in collyria, against inflammations of the eyes; and for staining the eye brows black. Its internal use does not seem to have been established till towards the end of the sixteenth century; and even then many practitioners thought it poisonous. But experience has

now

now fully evinced, that antimony, in its crude state, has no noxious quality, being often used, particularly in chronic eruptions; that some of the preparations of it are medicines of great efficacy; and that though many of them are most violently emetic and cathartic, yet even these, by a slight alteration or addition, lose their virulence, and become mild in their operation.

This mineral consists of a metal, united with common sulphur, and separable in its metallic form, by the same means by which other metallic bodies are extracted from their ores.

The pure metal operates, in a very minute dose, with extreme vehemence, as a purgative and emetic: when combined with sulphur, as in the crude mineral, its power is restrained.

Antimony is at present the basis of many official preparations, to be afterwards mentioned. But besides those still retained, many others have been formerly in use, and are still employed by different practitioners. We shall here therefore subjoin a table drawn up by Dr Black, exhibiting a distinct view of the whole.

Dr Black's TABLE of the PREPARATIONS of ANTIMONY.

Medicines are prepared either from crude Antimony, or from the pure metallic part of it called regulus.

From CRUDE ANTIMONY.

- I. By trituration.
Antimonium præparatum. Ed. et Lond.
- II. By the action of heat and air.
Flores Antimonii sine addito.
Vitrum Antimonii. Ed.
Antimonium vitrificatum. Lond.
Vitrum Antimonii ceratum. Ed.
Antimonium Calcareo-phosphoratum, five Pulvis Antimonialis. Ed.
Pulvis Antimonialis. Lond.

N

III. By the action of alkalies.

Hepar Antimonii mitissimum.
Regulus Antimonii medicinalis.
Hepar ad Kermes minerale
Geoffroi.
Hepar ad Tinct. Antimonii.
Kermes minerale.
Sulphur Antimonii præcipitatum. Ed. et Lond.

IV. By the action of nitre.

Crocus Antimonii mitissimus.
Vulgo Regulus Antimonii medicinalis.

Crocus Antimonii. Ed. et Lond.
Antimonii emeticum mitius. *Boerb.*
Antimonium ustum cum Nitro, *vulgo,*
Calx Antimonii vitrata. Ed.
Antimonium calcinatum. Lond.
vulgo, diaphor.

V. By the action of acids.

Antim. vitriolat. *Klaunig.*
Antim. cathartic. *Wilson.*
Antimonium muriatum, *vulgo Butyrum Antim.* Ed.
Antimonium muriatum. Lond.
Pulvis Algarothi, five *Mertiusius Vile.*
Bezoardicum minerale.
Antimonium tartarifatum, *vulgo,*
Tartarus emeticus. Ed.
Antimonium tartarifatum. Lond.
Vinum Antimonii tartarifati. Ed. et Lond.
Vinum Antimonii. Lond.

FROM THE REGULUS.

This metal separated from the sulphur by different processes, is called *Regulus antimonii simplex, Regulus martialis, Regulus jovialis*, &c. From it were prepared,

- I. By the action of heat and air,
Flores argentei, five nix antim.
- II. By the action of nitre,
Cerussa Antimonii.
Stomachicum Poterii.
Antihæcicum Poterii.
Cardiacum Poterii.

Preparations which have their name from antimony, but scarcely contain any of it.

Cinnabaris antimonii.
Tinctura antimonii.

In the various preparations of antimony, the reguline part is either combined with an acid, or in a condition to be acted upon by acids in the stomach; and the general effects of antimonials are, diaphoresis, nausea, full vomiting and purging, which perhaps may be best obtained by the forms of prepared antimony and emetic tartar. Some allege that antimonials are of most use in fevers when they do not produce any sensible evacuation, as is said to be the case sometimes with James's powder. Some therefore prefer it in typhus, and emetic tartar in synochus, in which there is the appearance at first of more activity in the system, and more apparent cause for evacuation.

APIUM [Gen] Rad. Fol. semen.

Apium graveolens Lin.

Smallage; the root, leaves, and seeds.

This plant is larger than the garden parsley, of a darker green colour, and of a stronger and more unpleasant flavour. The roots have been sometimes prescribed as an ingredient in aperient apozems and diet drinks: but are at present disregarded. The seeds of the plant are moderately aromatic, and were formerly used as carminatives; with which intention they are, doubtless, capable of doing service, though the other warm seeds with which the shops are furnished render these unnecessary.

ARABICUM GUMMI, [Lond. Ed.]

Mimosa nilotica Lin.

Gum arabic.

Gum arabic is a concrete gum, exuding from a tree growing in great abundance in Egypt and Arabia, which has accordingly

given name to this gum. It is brought to us from Turkey, in small irregular masses or strings, of a pale yellowish colour. The true gum Arabic is rarely to be met with in the shops; gum senega or seneca, which comes from the coast of Guinea, being usually sold for it. This greatly resembles the other, and perhaps, as Dale conjectures, exudes from a tree of the same kind: it is generally in large pieces, rough on the outside; and in these circumstances possibly consists the only difference between the two; although the former is held to be the purer gum, and therefore preferred for medicine; and the latter the strongest, most substantial, and cheapest, and consequently more employed for mechanical uses. The virtues of this gum are the same with those of gummy and mucilaginous substances in general: it is given from a scruple to two drachms in hoarsenesses, a thin acrimonious state of the fluids, and where the natural mucus of the intestines is abraded. It is an ingredient in the white decoction, chalk julep, the common emulsion, and some of the troches.

ARGENTUM [Lond.]

Silver.

Silver is entitled to a place in the materia medica, only as being the basis of different preparations: and of these, although several were formerly in use, yet only one now retains a place either in the London or Edinburgh pharmacopœias.

Abundance of virtues have been attributed to crude silver by the Arabians, and by some also of later times, but on very little foundation. This metal, taken in its crude state, has no effect on the

the body: combined with a small quantity of the nitrous acid, it proves a powerful, though not always a safe, hydragogue; with a larger, a strong caustic. The nitrous acid is the only one that perfectly dissolves this metal: on adding to this solution a minute portion of marine acid, or substances containing it, the liquor turns milky, and the silver falls to the bottom in form of a white calx: hence we are furnished with a method of discovering muriatic acid in waters.

ARISTOLOCHIA. [Ed.]

Birthwort: the root.

Three roots of this name were formerly directed for medicinal use, and have still a place in some pharmacopœias.

(1.) ARISTOLOCHIA LONGA Lin.

Long Birthwort.

This is a tuberous root, sometimes about the size of the finger, sometimes as thick as a man's arm, and a foot in length: it is nearly of an equal thickness all over, or a little thicker in the middle than at the ends: the outside is of a brownish colour: the inside yellowish.

(2.) ARISTOLOCHIA ROTUNDA Lin.

Round Birthwort.

This has scarce any other visible difference from the foregoing than its roundish shape.

(3.) ARISTOLOCHIA TENUIS. *Aristolochia Clematis* Lin.

Slender birthwort.

This is a long and slender root, rarely exceeding the thickness of a goose-quill.

These roots are the produce of N 2

Spain, Italy, and the southern parts of France. Their smell is somewhat aromatic; their taste warm and bitterish. Authors in general represent them as extremely hot and pungent; some say they are the hottest of all the aromatic plants; but as usually met with in the shops, they have no great pungency. The long and round sorts, on being first chewed, scarcely discover any taste, but in a little time prove nauseously bitterish; the long somewhat the least so. The other sort instantly fills the mouth with an aromatic bitterness, which is not ungrateful. Their medical virtues are, to heat, stimulate, and promote the fluid secretions in general; but they are principally celebrated in suppressions of female evacuations. The dose in substance is from a scruple to two drachms. The long sort is recommended externally for cleansing and drying wounds and ulcers, and in cutaneous diseases. None of them, however, are now in so much esteem as formerly: and while all of them are banished from the pharmacopœia of the London college, the *aristolochia tenuis* is the only one retained in that of Edinburgh.

ARNICA [Lond. Ed.] *Herba. flos, radix.*

Arnica montana Lin.

German leopard's bane; the herb, flowers, and roots.

This article had formerly a place in our pharmacopœias, under the title of *Doronicum Germanicum*. Then, however, it was little known or used; and being justly considered as one of the deleterious vegetables, it was rejected: but it has been again introduced into the list both of the London and Edinburgh colleges, on the authority of fresh observations, particularly of those of

of Dr Collins of Vienna, who has lately published a Dissertation on the Medical Virtues of the Arnica.

This plant grows in different parts of Europe, particularly in Germany. It has an acrid bitter taste, and when bruised, emits a pungent odour, which excites sneezing. On this account, the country people in some parts of Germany use it in snuff, and smoke it like tobacco. It was formerly represented as a remedy of great efficacy against effusions and suffusions of blood, from falls, bruises, or the like; and it was then also mentioned as a remedy in jaundice, gout, nephritis, &c. but in these affections it is now very little, if at all, employed.

Of late it has been principally recommended in paralytic affections, and in cases where a loss or diminution of sense arises from an affection of the nerves, as in instances of amaurosis. In these, it has chiefly been employed under the form of infusion. From a drachm to half an ounce of the flowers has been directed to be infused in a pint of boiling water, and taken in different doses in the course of the day: sometimes it produces vomiting, sometimes sweating, and sometimes diuresis; but its use is frequently attended with no sensible operation, except that in some cases of paralysis, the cure is said to be preceded by a peculiar prickling, and by shooting pains in the affected parts.

Besides being employed in paralytic affections, it has also been of late recommended as a very powerful antispasmodic; and been successfully employed in fevers, particularly those of the intermittent kind, and likewise in cases of gangrene. In these diseases it has

proved as efficacious as the Peruvian bark, when employed under the form of a pretty strong decoction, taken in small doses frequently repeated, or under the form of an electuary with honey.

These alleged virtues of the arnica have not been confirmed, as far as we know, by any trials made in Britain: and we are of opinion, that its virtues still remain to be determined by future observations. It is, however, one of those active substances which may be expected to be useful.

ARSENICUM [*Ed.*]

Arsenic.

Arsenic is contained, in greater or less quantity, in most kinds of ores, particularly in those of tin and bismuth, in the white pyrites, and in *cobalt*. Greatest part of the arsenic brought to us is extracted from this last named mineral by a kind of sublimation: the arsenic arises at first in the form of greyish meal; which, more carefully resublimed, concretes into transparent masses, the *white* arsenic of the shops.

Arsenic sublimed with one tenth its weight of sulphur, unites therewith into a bright yellow mass, in some degree transparent; the common *yellow* arsenic. On doubling the quantity of sulphur, the compound proves more opaque and compact, is of a deep red colour, like cinnabar; but with this difference, that it loses its beauty on being reduced into powder, while cinnabar is improved by this means; this is the common *red* arsenic. By varying the proportions of arsenic and sulphur, sublimates may be obtained of a great variety of shades of yellow and red.

Natural mixtures of arsenic and sulphur,

sulphur, resembling the foregoing preparations, are not unfrequently met with in the earth. The fossil red arsenic is the *sandaracha* of the Greeks, the *realgar* and *resgal* of the Arabian.. Both the red and yellow, when of a smooth uniform texture, are named *zarnicks*; and when composed of small scales or leaves, *auripigmenta* or *orpiments*: the last are the only substances to which the Greeks gave the name *αερίωνας*. That the zarnicks and orpiments really contain arsenic (contrary to the opinion of some late writers) is evident from experiments, by which a perfect arsenic, and in considerable quantity, is obtainable from them.

The pure or white arsenic has a penetrating corrosive taste; and takes into the body to the extent even of only a few grains, proves a most violent poison. Besides the effects which it has in common with other corrosives, it remarkably inflames the coats of the stomach, occasions a swelling and sphacelation of the whole body, and a sudden putrefaction after death, particularly, as is said, in the genitals of men. Where the quantity is so very small as not to prove fatal, tremors, palsies, and lingering hectic succeed. The remedies recommended for counteracting the effects of this poison are, milk and oily liquors immediately and liberally drank.

Some authors recommend acids, particularly vinegar, as antidotes against this poison, Others recommend a watery solution of calcareous or alkaline hepar sulphuris, which is found to combine with arsenic, and destroys most of its properties. A little iron in the solution is said to improve it. The

dry hepar may also be made into pills, and warm water drank after taking them.

Notwithstanding, however, the very violent effects of arsenic, it has been employed in the cure of diseases, both externally and internally. Externally, white arsenic has been chiefly employed in cases of cancer; and its good effects were supposed to depend on its acting as a peculiar corrosive. It is imagined that arsenic is the basis of a remedy long celebrated in cancer, that is kept a secret by the Plunket family in Ireland. According to the best conjectures, their application consists of the powder of some vegetables, particularly the ranunculus flammeus and cotula fetida, with a considerable proportion of arsenic and flower of sulphur intimately mixed together. This powder, made into a paste with the white of an egg, is applied to the cancerous part which is intended to be corroded, and being covered with a piece of thin bladder, smeared also with the white of an egg; the paste is suffered to lie on from twenty-four to forty-eight hours; and afterwards the eschar is to be treated with softening digestives, as in other cases. This application, whether it be precisely the same with Plunket's remedy or not, and likewise arsenic in mere simple form, have in some instances been productive of good effects. It is indeed a powerful escharotic, occasioning acute pain; but it has the peculiar excellence of not extending its operation laterally. If in some cases it has been beneficial, we must however allow that in others it does harm. While it has occasioned very considerable pain it has given the parts no disposition

to heal, the progress of the ulceration being even more rapid than before.

White arsenic has also been recommended as a remedy for cancer when taken internally. With this intention, five grains of arsenic, of a clear white shining appearance, and in small crystals, are directed to be dissolved in forty eight Troy ounces or four pound of distilled water; and of this solution the patient is to take a table spoonful, with an equal quantity of milk and a little syrup of white poppies, every morning fasting, taking nothing for an hour after it. After this has been continued for about eight days, the quantity is to be increased, and the doses more frequently repeated, till the solution be taken by an adult to the extent of six table spoonfuls in the course of a day. Mr Le Febure, who is we believe, the introducer of this practice, affirms that he has used it in more than two hundred instances without any bad effect, and with evident proofs of its efficacy. But when employed by others, it has by no means been found equally efficacious.

Arsenic, in substance, to the extent of an eighth of a grain for a dose, combined with a little of the flowers of sulphur, has been said to be employed internally in some very obstinate cases of cutaneous diseases, and with the best effects: but of this we have no experience.

Of all the diseases in which white arsenic has been used internally, there is no one in which it has been so frequently and so successfully employed as in the cure of intermittent fevers. It has been long used in Lincolnshire, and other fenny countries, under the name of the *arsenic drop*, prepared

in different ways: And it is probable that an article, which has had a very extensive sale, under the title of the *tasleless-ague drop*, is nothing else but a solution of arsenic. Whether this be the case or not, we have now the most satisfactory information, in a late volume of the Medical Reports, of the effects of Arsenic in the cure of Agues, Remitting Fevers, and Periodic Headachs, by Dr Fowler of Stafford. He directs, sixty-four grains of arsenic, reduced to a very fine powder, and mixed with as much fixed vegetable alkaline salt, to be added to half a pound of distilled water, in a Florence flask; that it should then be placed in a sand heat, and gently boiled till the arsenic be completely dissolved; when the solution is cold, half an ounce of compound spirit of lavender is to be added to it, and as much distilled water as to make the whole solution amount to a pound. This solution is taken in doses, regulated according to the age, strength, and other circumstances of the patient, from two to twelve drops, once, twice, or oftener in the course of the day. And in the diseases above mentioned, particularly in intermittents, it has been found to be a safe and very efficacious remedy, both by Dr Fowler and other practitioners: but in some instances even when given in very small doses, we have found it excite violent vomiting. But besides this, it has also been alleged that persons cured of intermittents by arsenic, are very liable to become phthisical.

If arsenic be ever extensively employed internally, it will probably be most certain and most safe in its operation when brought to the state of a salt readily soluble in water. Mr Morveau tells us, that it

it may be brought to the state of a true neutral salt by the following process. Mix well together equal quantities of nitre and of pure white arsenic; put them into a retort, and distil at first with a gentle heat, but afterwards with so strong a heat as to redden the bottom of the retort. By this means the alkaline basis of the nitre will unite with the acid of the arsenic, and will be found in the bottom of the retort in the form of a neutral salt, from which crystals of a prismatic figure, may be obtained by solution, and subsequent crystallisation. This sal arsenici has been employed with great success by several practitioners.

The red and yellow arsenics, both native and factitious, have little taste, and are much less violent in their effects than the foregoing. Sulphur, which restrains the power of mercury and antimony, remarkably abates the virulence of this poisonous mineral also. Such of these substances as participate more largely of sulphur, seem to be almost innocent: the factitious red arsenic and the native orpiments, have been given to dogs in considerable quantity, without their being productive of any apparent bad consequences.

ARTEMISIA [Ed.] Folia.

Artemisia vulgaris Lin.

Mugwort; the leaves.

This plant grows plentifully in fields, hedges, and waste places, throughout England: and flowers in June. In appearance it somewhat resembles the common wormwood: the difference most obvious to the eye is in the flowers, those of wormwood hanging downwards, while the flowers of mugwort stand erect.

The leaves of this plant have a light aromatic smell, and an herbaceous bitterish taste. They were formerly celebrated as uterine and antihysteric: an infusion of them is sometimes drank, either alone or in conjunction with other substances, in suppression of the menstrual evacuations. This medicine is certainly a very mild one, and considerably less hot than most others to which these virtues are attributed: in some parts of this kingdom, mugwort is now, however, very little employed in medicine; and it is probably with propriety that the London College have rejected it from their pharmacopœia.

ARTHANITA, Radix.

Cyclamen europæum Lin.

Sowbread; the root.

This plant is met with in the gardens of the curious. The root has, when fresh, an extremely acrimonious burning taste, which it almost entirely loses on being dried. It is recommended as an emetic; in cataplasms for scirrhus and scrophulous tumours; and internally as a cathartic, detergent, and aperient: it operates very slowly, but with great virulence, inflaming the fauces and intestines.

ARUM [Lond. Ed.] Radix.

Arum maculatum Lin.

Wake robin; the root.

This plant grows wild under hedges, and by the sides of banks, in most parts of England. It sends forth in March three or four triangular leaves, which are followed by a naked stalk bearing a purplish pistil inclosed in a long sheath: this is succeeded in July by a bunch of reddish berries. In some plants, the leaves are spotted with black, in others with white spots, and in others

others not spotted at all: the black spotted sort is supposed to be the most efficacious.

All the parts of arum, particularly the root, have an extremely pungent, acrimonious taste; if the root be but slightly chewed, it continues to burn and vellicate the tongue for some hours, occasioning at the same time a considerable thirst: these symptoms are alleviated by butter-milk or oily liquors. Dried and kept for some time, it loses much of its acrimony, and becomes at length an almost insipid farinaceous substance.

The root is a powerful stimulant. It is reckoned a medicine of great efficacy, in some cachetic and chlorotic cases, in weakness of the stomach occasioned by a load of viscid phlegm. Great benefit has been obtained from it in rheumatic pains, particularly those of the fist kind, and which were deep seated. In these cases from ten grains to a scruple of the fresh root may be given twice or thrice a day, made into a bolus or emulsion with unctuous and mucilaginous substances, which cover its pungency, and prevent its making any painful impression on the tongue. It generally excites a slight tingling sensation through the whole habit, and when the patient is kept warm in bed, produces a copious sweat.

The arum was formerly an ingredient in an officinal preparation, called the compound powder of arum; but in that form its virtues are very precarious. Some recommend a tincture of it drawn with wine; but neither wine, water, nor spiritus extract its virtues.

ASAFÆTIDA [*Lond. Ed.*]
Gummi resina.

Ferula Asafetida Lin.

Asafætida; the gum-resin.

This is the concrete juice of a large umbelliferous plant, a native of Persia. 'Till very lately it was not to be met with in our houses; but, by the industry of the late Dr Hope, it is now growing in the botanical gardens at Edinburgh, and in some other places: and it is found, that it not only bears the vicissitudes of our climate, even in the open air, but that the plant is here strongly impregnated with its peculiar juice.

This juice exudes liquid, and white like milk, from wounds made in the root of the plant: on being exposed to the air, it turns of a brownish colour, and gradually acquires different degrees of consistency. It is brought to us in large irregular masses, composed of various little shining lumps or grains, which are partly of a whitish colour, partly reddish, and partly of a violet hue. Those masses are accounted the best which are clear, of a pale reddish colour, and variegated with a great number of elegant white tears.

This drug has a strong fetid smell, somewhat like that of garlic; and a bitter, acrid, biting taste. It loses some of its smell and strength by keeping, a circumstance to be particularly regarded in its exhibition. It consists of about one third part of pure resin and two third parts of gummy matter; the former soluble in rectified spirit, the other in water. Proof-spirit dissolves almost the whole into a turbid liquor; the tincture in rectified spirit is transparent.

Asafætida is the strongest of the fetid gums, and of frequent use in hysseric and different kinds of nervous complaints. It is likewise of considerable efficacy in flatulent colics,

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colics; and for promoting all the fluid secretions in either sex. The antients attributed to this medicine many other virtues, which are at present not expected from it.

This gummy resin is an ingredient in the official gum pills, fetid tincture, and fetid volatile spirit.

ASARUM [Lond. Ed.] *Folium.*
Asarum europæum Lin.

Asarabacca; the leaves.

Asarum is a very low plant, growing naturally in France, Italy, and other warm countries. It grows readily in our gardens; and although the dried roots have been generally brought from the Levant, those of our own growth do not seem to be weaker.

Both the roots and leaves have a nauseous, bitter, acrimonious, hot taste; their smell is strong, and not very disagreeable. Given in substance from half a drachm to a drachm, they evacuate powerfully both upwards and downwards. It is said, that tinctures made in spirituous menstrua, possess both the emetic and cathartic virtues of the plant; that the extract obtained by inspissating these tinctures, acts only by vomiting, and with great mildness: that an infusion in water proves cathartic, rarely emetic: that aqueous decoctions made by long boiling, and the watery extract, have no purgative or emetic quality, but prove good diaphoretics, diuretics, and emmenagogues.

The principal use of this plant among us is as a sternutatory. The root of asarum is perhaps the strongest of all the vegetable errhines, white hellebore itself not excepted. Snuffed up the

nose, in the quantity of a grain or two, it occasions a large evacuation of mucus, and raises a plentiful spitting. The leaves are considerably milder, and may be used to the quantity of three, four, or five grains. Geoffroy relates that after snuffing up a dose of this errhine at night, he has frequently observed the discharge from the nose to continue for three days together; and that he has known a paralysis of the mouth and tongue cured by one dose. He recommends this medicine in stubborn disorders of the head, proceeding from viscid tenacious matter, in palsies, and in soporific distempers. The leaves are the principal ingredient in the *pulvis sternutatorius*, or *pulvis asari compositus*, as it is now termed, of the shops.

ASPARAGUS [Cos.] *Radix,*
turionum.

Asparagus officinalis Lin.

Asparagus; the root and shoots.

This plant is cultivated in gardens for culinary use. The roots have a bitterish mucilaginous taste, inclining to sweetness, the fruit has much the same kind of taste; the young shoots are more agreeable than either. Asparagus promotes appetite, but affords little nourishment. It gives a strong smell to the urine in a little time after eating it, and for this reason chiefly it is supposed to be diuretic: it is likewise esteemed aperient and deobstruent. Some suppose the shoots to be most efficacious; others the root; and others the bark of the root. Asparagus appears from experience to contribute very little either to the exciting of urine when suppressed, or increasing its discharge; and in cases where aperient medicines generally

nérally do service, this has little or no effect.

ATRIPLEX FÆTIDA

[*Ed.*] *Herba.*

Ctenopodium Vulvaria Lin.

Stinking orach; the leaves.

This is a low plant, sprinkled all over with a kind of whitish clammy meal: it grows about dunghills, and other waste places. The leaves have a strong fetid smell, with which the hand by a slight touch, becomes so impregnated as not to be easily freed from it. Its smell has gained it the character of an excellent antihysterical; and this is the only use to which it is applied. Tournefort recommends a spirituous tincture, others a decoction in water, and others a conserve of the leaves, as of wonderful efficacy in uterine disorders; but in the present practice it is little employed.

AVENA [*Lond. Edin.*] *Semen.*

Avena sativa Lin.

The oat; its seed.

This grain is an article rather of food than of medicine. It is sufficiently nutritive and easy of digestion. The gruels made from it have likewise a kind of soft mucilaginous quality: by which they obtund acrimonious humours, and prove useful in inflammatory disorders, coughs, hoarseness, roughness and exulcerations of the fauces. They are by no means unpleasent, and at the same time a gently nutritive drink, in febrile diseases in general.

AURANTIUM HISPAL-

ENSE [*Lond.*] *Folium, flos, fructus, succus, et cortex exterior.* [*Ed.*] *Folia, flores, aqua stillatitia et oleum essentielle florum, fructus, succus, et cortex exterior.*

Citrus Aurantium Lin.

Seville orange; the leaf, flower, juice of the fruit, and its outer rind.

The orange is a beautiful evergreen tree or rather shrub; it is a native of the warmer climates, and does not easily bear the winters of Great Britain.

The flowers are highly odorous, and have been for some time past, in great esteem as a perfume: their taste is somewhat warm, accompanied with a degree of bitterness. They yield their flavour by infusion to rectified spirit, and in distillation both to spirit and water; the bitter matter is dissolved by water, and, on evaporating the decoction, remains entire in the extract. An oil distilled from these flowers is brought from Italy under the name of *oleum* or *essentia Neroni*.

Orange flowers were at one time said to be an useful remedy in convulsive and epileptic cases; but experience has not confirmed the virtues attributed to them. The leaves of the orange have also been recommended for the same purpose, but have by no means answered the expectations entertained by some.

The outer yellow rind of the fruit is a grateful aromatic bitter; and proves an excellent stomachic and carminative, promoting appetite, warming the habit, and strengthening the tone of the viscera. Orange peel appears to be very considerably warmer than that of lemons, and to abound more with essential oil; to this circumstance therefore due regard ought to be had in the use of these medicines. The flavour of the fruit is likewise supposed to be less perishable than that of the other: hence the London college employ orange peel in the spirituous bitter tincture, which

is designed for keeping; while in the bitter watery infusion, lemon-peel is preferred. A syrup and distilled water are, for the same reason, prepared from the rind of oranges in preference to that of lemons.

The outer rind of the orange is the basis of a conserve both in the Edinburgh and London pharmacopœias; and this is perhaps one of the most elegant and convenient forms for exhibiting it.

The juice of oranges is a grateful acid liquor, of considerable use in febrile or inflammatory distempers, for allaying heat, quenching thirst, and promoting the salutary excretions: it is likewise of use in genuine scorbutus or sea scurvy. Although the Seville, or *bitter-orange* as it is called, has alone a place in our pharmacopœias, yet the juice of the China orange, is much more employed. It is milder, and less acid; and is employed in its most simple state with great advantage, both as a cooling medicine, and as an useful antiseptic in fevers of the worst kinds, and many other acute diseases.

AURANTIA CURASLAVENSIA.

Curacao oranges.

These are the small young fruit of the Seville orange dried. They are moderately warm bitterish aromatics, of a flavour sufficiently agreeable.

AURUM [Brun.]

Gold.

This metal was introduced into medicine by the Arabians, who esteemed it one of the greatest cordials and comforters of the nerves. From them Europe received it without any diminution of its character; in foreign pharmacopœias

it is still retained, and even mixed with the ingredients from which simple waters are to be distilled. But no one, it is presumed, at this time, expects any singular virtues from it, since it certainly is not alterable in the human body. Mr Geoffroy, though unwilling to reject it from the cordial preparations, honestly acknowledges, that he has no other reason for retaining it, than compliance to the Arabian schools. The chemists have endeavoured, by many elaborate processes, to extract what they call a sulphur or anima of gold; but no method is as yet known of making this metal an useful medicine; all the tinctures of it, and aurum potable, which have hitherto appeared, are real solutions of it in aqua regia, diluted with spirit of wine or other liquors, and prove injurious to the body rather than beneficial. A place, however, is now given in some of the foreign pharmacopœias to the aurum fulminans; and it has of late been recommended as a remedy in some convulsive diseases, and particularly in the chorea sancti Viti.

AXUNGIA PORCINA. See Sus.

BALSAMITA [Gen.] Folia.

Tanacetum Balsamita Lin.

Costmary; the leaves.

This was formerly a very common garden plant, and of frequent use both for culinary and medicinal purposes; but it is at present very little regarded for either; though it should seem, from its sensible qualities, to be equal or superior, as a medicine, to some aromatic herbs which practice has retained. The leaves have a bitterish, warm, aromatic taste; and

a very pleasant smell, approaching to that of mint or a mixture of mint and maudlin. Water elevates their flavour in distillation; and rectified spirit extracts it by infusion. It has been recommended in hysterical affections; and has been supposed to be very powerful in correcting the influence of opium. The leaves should be collected in the month of July or August.

BALSAMUM CANADENSE

SE [Lond. Ed.]

Pinus balsamea Lin.

Canada balsam.

The Canada balsam is a transparent resinous juice, of a light amber colour, and pretty firm consistence, brought to this country from Canada in North America. It is a very pure turpentine, being the product of a species of fir. It has an agreeable smell, and a warm pungent taste. Hitherto it has been but little employed in medicine: but is thought capable of answering every purpose for which the next article is employed.

BALSAMUM COPAIVA.

[Lond.] COPAIBAË [Ed.]

Copaifera Balsamum Lin.

Balsam of Copaiva.

The tree which produces this balsam is a native of the Spanish West India Islands, and of some parts of the continent of South America. It grows to a large size, and the balsamum Copaiva flows, under the form of a resinous juice, from incisions made in the trunk.

The juice is clear and transparent, of a whitish or pale yellowish colour, an agreeable smell, and a bitterish pungent taste. It is usually about the consistence of oil or a little thicker: when long kept,

it becomes nearly as thick as honey, retaining its clearness; but has not been observed to grow dry or solid, as most of the other resinous juices do. We sometimes meet with a thick sort of balsam of Copaiva, which is not at all transparent, or much less so than the foregoing, and generally, has a portion of turbid watery liquor at the bottom. This sort is probably either adulterated by the mixture of other substances, or has been extracted by coction from the bark and branches of the tree: its smell and taste are much less pleasant than those of the genuine balsam.

Pure balsam of Copaiva dissolves entirely in rectified spirit, especially if the menstruum be previously alkalinized: the solution has a very fragrant smell. Distilled with water, it yields a large quantity of a limpid essential oil; and in a strong heat, without addition, a blue oil.

The balsam of Copaiva is an useful corroborating detergent medicine, accompanied with a degree of irritation. It strengthens the nervous system, tends to loosen the belly; in large doses proves purgative, promotes urine, and cleanses and heals exulcerations in the urinary passages, which it is supposed to perform more effectually than any of the other balsams. Fuller observes, that it gives the urine an intensely bitter taste, but not a violet smell as the turpentine do.

This balsam has been principally celebrated in gleet and the fluor albus, and externally as a vulnerary. The author above mentioned, recommends it likewise in dysenteries, in scorbutic cachexies, in diseases of the breast and lungs, and in an acrimonious

or putrescent state of the juices: he says, he has known very dangerous coughs, which manifestly threatened a consumption, cured by the use of this balsam alone; and that notwithstanding its being hot and bitter, it has good effects even in hectic cases. Most physicians seem now, however, to consider balsam and resins too stimulant in phthical affections.

The dose of this medicine rarely exceeds twenty or thirty drops, though some authors direct sixty or upwards. It may be conveniently taken in the form of an oleosaccharum, or in that of an emulsion, into which it may be reduced, by triturating it with almonds, with a thick mucilage of gum-arabic, or with the yolk of eggs, till they are well incorporated, and then gradually adding a proper quantity of water.

BALSAMUM GILEADENSE [Ed.]

Amyris Gileadensis Lin.

Balam of Gilead.

This article, which has also had the name of Balamum Judaicum, Syriacum, e Mecca, Opobalamum, &c. is a resinous juice, obtained from an ever-green tree, growing spontaneously, near Mecca, on the Asiatic side of the Red Sea. The best sort of it is a spontaneous exudation from the tree; and is held in so high esteem by the Turks, who are in possession of the country where it is produced, that it is rarely, if ever, to be met with genuine among us. From the high price set upon it, many adulterations are practised. The true opobalamum, according to Alpinus, is at first turbid and white, of a very strong pungent smell, like that of

turpentine, but much sweeter: and of a bitter, acrid, alstringent taste: by being kept for some time, it becomes thin, limpid, of a greenish hue, then of a gold yellow, and at length of the colour of honey. According to Dr Alston, the surest mark of its being pure and unadulterated is its spreading quickly on the surface of water when dropt into it. He tells us, that if a single drop be let fall into a large saucer full of water, it will immediately spread over its surface, and seem in a short time to dissolve or disappear: but in about the space of half an hour it becomes a transparent pellicle, covering the whole surface, and may be taken up with a pin. In this state it has lost both its fluidity and colour; it has become white and cohering, and has communicated its smell and taste to the water. It is however, he observes, rare to get it in a condition that bears this test.

This balsam is in high esteem among the eastern nations, both as a medicine and as an odoriferous unguent and colmetic. It has been recommended in a variety of complaints; but its great scarcity has prevented it from coming into use among us; and it is now in general believed that the Canada and Copaiva balsam will answer every purpose for which it can be employed.

BALSAMUM PERUVIANUM [Lond. Ed.]

Myroxylon peruvianum Lin.

Balsam of Peru.

The common Peruvian balsam is said to be extracted by coction in water, from an odoriferous shrub growing in Peru, and the warmer parts of America. This balsam, as brought to us, is nearly of

of the consistence of thin honey; of a reddish brown colour, inclining to black, an agreeable aromatic smell, and a very hot biting taste. Distilled with water, it yields a small quantity of a fragrant essential oil of a reddish colour; and in a strong fire, without addition, a yellowish red oil.

Balsam of Peru is a very warm aromatic medicine, considerably hotter and more acrid than Copaiva. Its principal effects are, to warm the habit, and to strengthen the nervous system. Hence its use in some kinds of asthma, gonorrhœas, dysenteries, suppressions of the uterine discharges, and other disorders proceeding from a debility of the solids. It is also employed externally, for cleansing and healing wounds and ulcers; and sometimes against pal-fies and rheumatic pains.

This balsam does not unite with water, milk, expressed oils, animal fats, or wax; it may be mixed in the cold with this last, and likewise with the sebaceous substance called expressed oil of mace, but if the mixture be afterwards liquefied by heat, the balsam separates and falls to the bottom. It may be mixed with water into the form of an emulsion, in the same manner as the balsam of Copaiva. Alkaline lixivia dissolve great part of it; and rectified spirit the whole.

It is an ingredient in several official compositions: in some of which, as we shall afterwards endeavour to show, it has rather a bad than a good effect.

There is another sort of balsam of Peru, of a *white* colour, and considerably more fragrant than the former. This is very rarely brought to us. It is said to be the produce of the same plant which yields the

common or *black* balsam; and to exude from incisions made in the trunk; while the former is obtained by boiling. There is also a third kind, commonly called the *red* or *dry*. This is supposed to obtain a different state from the white, merely in consequence of the treatment to which it is subjected after it is got from the tree. It is almost as fragrant as the balsam of Gilead, held in so high esteem among the eastern nations. It is very rarely used in Britain, and almost never to be met with in our shops.

BALSAMUM RAKASIRI [*Brân.*]

We are less acquainted with the history of this balsam than any other. It is the product of an American tree unknown to us; and is supposed to be a spontaneous exudation. If the accounts given of it by several writers, particularly by Mr Fermin in his History of Surinam, are to be depended on, it is one of the most powerful and useful balsams yet discovered. It is said to possess all the virtues of balsamum Copaiva, but in a much higher degree. It is represented as a most useful application, both in cases of recent wounds and old ulcers; and it is held forth as an infallible remedy, both for the gonorrhœa in men, and fluor albus in women. These accounts, however, are solely founded on the representation of the Indians, who are alone in the habit of using it; for hitherto it has been very little employed in Europe, and is very rarely to be met with.

BALSAMUM TOLUTANUM

[*Lond. Ed.*]

Toluifera Balsamum Lin.

Balsam of Tolu.

This flows from a tree growing in

in Tolu, in the Spanish West-Indies; from whence the balsam is brought to us in little gourd shells. It is of a yellowish brown colour, inclining to red; in consistence thick and tenacious: by age it grows hard and brittle, without suffering any great loss of its more valuable parts. The smell of this balsam is extremely fragrant, somewhat resembling that of lemons; its taste warm and sweetish, with little of the pungency, and nothing of the nauseous relish, which accompany the other balsams. It has the same general virtues with the Peruvian; but is much milder, and for some purposes, particularly as a corroborant in gleet and seminal weaknesses, is supposed to be more efficacious. It is an ingredient in the *syrupus helianus*, and *tinctura toluana*.

BARDANA [Lond. Ed.] Radix.

Arctium Lappa Lin.

Burdock; the root.

This is a common plant about way-sides, sufficiently known from its scaly heads, or burs, which stick to the clothes. The seeds have a bitterish subacid taste: they are recommended as very efficacious diuretics, given either in the form of emulsion, or in powder, to the quantity of a drachm. The roots taste sweetish, with a slight austeriety and bitterness: they are esteemed aperient, diuretic, and sudorific; and are said to act without irritation, so as to be safely used in acute disorders. Decoctions of them have of late been used in rheumatic, gouty, venereal, and other disorders; and are preferred sometimes to those of sarsaparilla.

BARILLA *Natron impurum* [Lond.] *Kali Spinos cineres* [Ed.] *Natron antiquorum Lin.*

Barilla, or impure fossil alkali.

Barilla is a saline substance in a very impure state, chiefly imported into Britain from the Mediterranean. Its great constituent is the fossil alkali; and it is under that form alone that it is now employed in medicine, either by itself, or combined with other articles. Its medicinal virtues will therefore more properly be mentioned under the title of *Natron præparatum* of the London, and Soda purificata of the Edinburgh, college.

The barilla, or natron of the ancients, has sometimes been found native in the earth, particularly near Smyrna, and in different places of Asia; it has also been found in some parts of Barbary, Hungary, and Russia: but it is chiefly obtained by artificially separating it from those substances which contain it. Our barilla is chiefly imported from Spain, where it is obtained by the calcination of vegetables, particularly the kali, growing on the sea shore. In Britain, much of it is obtained in a very impure state, by the calcination of the different fuci, or sea-weeds, growing on the rocks, and covered by the sea-water every tide. It is probable that all these different vegetables derive it entirely from the sea-salt. It is to be hoped, however, that a process will be discovered for obtaining it from sea-salt in an easy manner, and at a cheaper rate, than it is at present imported or obtained at home.

BARYTES [Ed.]

Terra Ponderosa, or heavy earth.

This earth is one of those of the alkaline or absorbent kind, and differs from the rest in many respects, but chiefly in weight, being nearly twice as heavy as lime,

lime, magnesia, or clay in weight.

It is found in most metallic veins, especially those of lead, differently combined, but chiefly with fixed air or with vitriolic acid. The first or aerated barytes, is called by the workmen, when crystallised, coxcombspar: it is however seldom found crystallised but more commonly filling up the whole cavity of the vein; it is then compact and breaks with a glassy surface; and appears to be composed of rays converging to a centre. It effervesces with all the acids properly diluted, and is soluble in the vitrous and muriatic. The vitriolated barytes is heavier, and much more transparent than the aerated, has a rhomboidal texture and a bright surface, and is called, by many writers on mineralogy, Marmor metallicum. It does not effervesce with the acids, nor it is soluble in any of them.

The aerated barytes in powder has been long employed by the miners as a poison for rats and other vermin. We do not know that it was ever administered as a medicine. Dr Crawford first proposed barytes as a remedy for scrophula, and the form he recommended was, the solution of it in muriatic acid. Subsequent trials have in some measure confirmed this opinion; but farther experiments seem requisite for establishing it. The muriated braytes is made by dissolving the aerated barytes in a very dilute muriatic acid (namely the ordinary acid diluted with 10 or 12 times its weight of water); when the solution is saturated and filtered it must be evaporated slowly and set to crystallise.

The best manner of ascertaining the dose, and of exhibiting this active medicine, is by means of a

solution of the crystallised salt in water. The solution which some of the best practitioners here prefer, is one fully saturated with the salt: of this they give to an adult 10 drops three times a day: and increase the dose by adding one drop to each, every second day. Some constitutions bear 40 drops or more for a dose, while a much less quantity sickens others.

Its effects are to increase all the excretions, and to dispose ichorous sores to heal. It has been used, in this place, by several practitioners of eminence; who all agree in thinking it a medicine of great utility, and a valuable acquisition to the materia medica.

BDELLIUM [*Succ.*]

Bdellium: *gummi resina*.

Bdellium is a gummy-refinous concrete juice brought from Arabia and the East-Indies, in masses of different figures and magnitudes. It is of a dark reddish brown colour, and in appearance somewhat resembles myrrh; it is semi-transparent, and, as Geoffroy justly observes, looks like glue. It grows soft and tenacious in the mouth, sticks to the teeth, has a bitterish taste, and not a disagreeable smell. Bdellium is recommended as a sudorific, diuretic, and uterine; and in external applications for maturing tumours, &c. In the present practice, it is scarcely used. And accordingly it has now no place either in the London or Edinburgh Pharmacopœias; but it is still retained in several of the latest foreign ones, and enters some of their plasters.

BECCABUNGA [*Land*] *Herba*.

Vernica Beccabunga Lin.

Brooklime: the herb.

This is a low plant, common in little

little rivulets and ditches of standing water. The leaves remain all the winter, but are in greatest perfection in the spring. Their prevailing taste is an herbaceous one, accompanied with a very slight bitterness.

Beccabunga has been supposed to have a laponaceous detergent virtue, without pungency or irritation: hence it has been directed in those species of scurvy where the *cocclearia*, and other acrid antiscorbutics, were supposed to be less proper. If any virtue is expected from beccabunga, it should be used as food.

BELLADONA [Ed.] *For.*

Atropa Belladonna Lin.

Deadly nightshade.

The deadly nightshade is a native of Britain, growing in many different places, and in considerable abundance. It has long been considered, which indeed may be inferred from the name, as one of the most deleterious of the vegetable narcotic poisons. It has, however, for a considerable number of years been employed in the practice of medicine, both externally and internally; and it has accordingly got a place in successive editions of the Edinburgh pharmacopœia. It is an article of great activity, and under prudent management may be used with safety.

The belladonna taken internally, has been highly recommended in cancer by several writers, particularly by Dr Lambergen and Dr Munch, in treatises professedly published with the intention of recommending it. Besides a very remarkable narcotic power, this vegetable possesses considerable influence in promoting all the excretions, particularly sweat, urine, P

and saliva. It has been employed under the form of infusion, made of the dried leaves, to the extent of a scruple in a considerable quantity of water, and taken in the course of a day. It is thought to be much injured by heat, and therefore some practitioners prefer the dry powder to the decoction or infusion: and thus employed, the dose is limited to a few grains.

Besides cancer, schirrus, and other obstinate tumours, it has been employed with success in some cases of melancholia, mania, and epilepsy.

Externally, it has been applied to open cancers under the form of an infusion of the dried leaves; and to occult ones, the recent leaves have been applied in substance. And there are well authenticated cases on record of good effects being obtained from it in both these ways.

BENZOE [Lond.] BENZOINUM [Ed.] *Resina.*

Syrax Benzoe.

Benzoin, the resin.

Benzoin is a concrete resinous juice. It is brought from the East-Indies only; in large masses composed of white and light brown pieces, or yellowish specks, breaking very easily between the hands: such as is whitest, and free from impurities, is most esteemed.

In most of the new foreign pharmacopœias benzoin is said to be obtained from the Croton benzoe of Linné. But Dr Dryander of London has, in the Philosophical Transactions, described the tree producing it, to which he gives the name of *Syrax benzoe*. It grows chiefly in the island of Sumatra.

This resin has a very little taste, impressing only a slight sweetness

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on the tongue: its smell is extremely fragrant and agreeable, especially when heated. Committed to the fire in proper vessels, it yields a considerable quantity of a white saline concrete called *flowers*, of an acidulous taste and grateful odour, soluble in rectified spirit; and, by the assistance of heat, in water.—We shall have occasion to treat of these afterwards.

The principal use of benzoin is in perfumes, and as a colometric: it is rarely met with in extemporaneous prescriptions, and enters in substance only one official composition, the *balsamum aromaticum*, or *tinctura benzoes composita*, as it is now more properly styled by the London college. It seems to have no ill title to the virtues of storax and balsam of Tolu, at least in a subordinate degree. The flowers are recommended in disorders of the breast; and with this intention they are made an ingredient in the *pægoric elixir*, or camphorated tincture of opium.

BERBERIS [*Succ.*] *Cortex*, *baccarum succus*.

Berberis vulgaris Lin.

Barberry, the bark of the tree and the juice of the berries.

The barberry is a small tree, or rather a large bush, covered with an ash-coloured bark, under which is contained another of a deep yellow: the berries are of an elegant red colour, and contain each two hard brown seeds. It grows wild on chalky hills in several parts of England; and is frequently planted in hedges and in gardens.

The outward bark of the branches, and the leaves, have an astringent acid taste; the inner yellow bark, a bitter one; this last is said to be serviceable in

the jaundice; and to be an useful purgative.

The berries, which to the taste are gratefully acid, and moderately restringent, have been given with good success in bilious fluxes, and discharges proceeding from acrimony. Among the Egyptians, barberries are employed in fluxes and in malignant fevers, for abating heat, quenching thirst, raising the strength, and preventing putrefaction; the fruit is macerated for a day and night, in about twelve times its quantity of water, with the addition of a little fenugreek seed, or the like, to prevent effluence to the stomach; the liquor strained off, and sweetened with sugar, or syrup of citrons, is liberally given the patient to drink. Prosper Alpinus (from whose treatise *De medicina Egyptiorum* this account is extracted) informs us, that he took this medicine himself with happy success, in a pestilential fever accompanied with an immoderate bilious diarrhœa.

The barberry, however, is now so little used for medical purposes in Britain, that it is rejected from the list both of the London and Edinburgh colleges.

BETA [*Gen.*] *Folium*, *radix*.

Beta vulgaris Lin.

The white and red beet; the root and leaves.

These plants are cultivated in gardens chiefly for culinary use.

BETONICA [*Brun.*] *Folia et flores*.

Betonica officinalis Lin.

Betony; the leaves and flowers.

Betony is a low plant, growing in woods and shady places, in several parts of England; the flowers come forth in June and July; they are of a purplish colour, and stand

stand in spikes on the tops of the stalks. The leaves and flowers have an herbaceous, roughish, somewhat bitterish taste, accompanied with a very weak aromatic flavour. This herb has long been a favourite among writers on the materia medica, who have not been wanting to attribute to it abundance of good qualities. Experience does not discover any other virtue in betony than that of a mild corroborant; as such, an infusion or light decoction of it may be drank as tea, or a saturated tincture in rectified spirit given in suitable doses, in laxity and debility. The powder of the leaves, snuffed up the nose, provokes sneezing; and hence betony is sometimes made an ingredient in sternutatory powders: this effect does not seem to be owing, as is generally supposed, to any peculiar stimulating quality in the herb, but to the rough hairs with which the leaves are covered. The roots of this plant differ greatly in quality from the other parts; their taste is bitter and very nauseous: taken in a small dose, they vomit and purge violently, and are supposed to have somewhat in common with the roots of hellebore. It is pretty singular, if true, that betony affects those who gather any considerable quantity of it, with a disorder resembling drunkenness; as affirmed by Simon Paulli and Bartholinus.

From these sensible qualities and operative effects, although it has now no place in our pharmacopœias, it certainly deserves attention.

BETULA [*Gen.*] *Cortex, succus*
Betula alba Lin.

The birch tree; the bark and sap.
This tree grows wild in most

woods: its bark consists of a thick brittle substance of a brownish red colour; and of several very thin, smooth, white, transparent membranes. These last are highly inflammable; and though scarcely of any particular smell or taste, abound with resinous matter: the thick brittle part is less resinous, and in taste roughish; of the medical virtues of either, little or nothing is known with certainty.

On wounding or boring the trunk of the tree in the beginning of spring, a sweetish juice issues forth, sometimes, as is said, in so large a quantity as to equal in weight the whole tree and root: one branch will bleed a gallon or more in a day. This juice is chiefly recommended in scorbutic disorders; its most sensible effect is to promote the urinary discharge.

BEZOAR [*Brun.*]

Calculus capræ bezoardicæ.

Bezoar stone.

The bezoar stone is a calculous concretion found in the stomach of certain animals, which are said to be of the goat kind. It is composed of concentrical coats surrounding one another, with a little cavity in the middle, containing a bit of wood, straw, hair, or some similar substance.

Bezoar was not known to the ancient Greeks; and is first taken notice of by the Arabians, who extol it in a great variety of disorders, particularly against poisons. Later writers also bestow extraordinary commendations on it as a sudorific and alexipharmic; virtues, to which it certainly has no pretence. It is a morbid concretions, of no smell or taste, not digestible in the stomach of the animal in which it is found, and scarcely

scarcely capable of being acted on by any of the juices of the human body. It cannot be considered in any other light than as an absorbent; and is much the weakest of all the common substances of that class. It has been given to half a drachm, and sometimes a whole drachm, without any sensible effect; though the general dose is only a few grains, from which nothing can be expected.

BISMUTHUM [Brun.]

Wismuthum nativum.

Bismuth.

A calx and flowers of this semimetal have been recommended as similar in virtue to certain antimonial preparations; but are at present of no other use than as a pigment or cosmetic; and it is now rejected from the British pharmacopœias.

BISTORTA [Lond Ed.] Radix.

Polygonum Bistorta Lin.

Bistort, or snakeweed; the root.

This plant grows wild in moist meadows in several parts of England. The root is about the thickness of the little finger, of a blackish brown colour on the outside, and reddish within: it is withered or bent vermicularly (whence the name of the plant) with a joint at each bending, and full of bulky fibres; the root of the species here mentioned has, for the most part, only one or two bendings: others have three or more.

All the parts of bistort have a rough austere taste, particularly the root, which is one of the strongest of the vegetable astringents. It is employed in all kinds of immoderate hæmorrhagies and other fluxes, both internally and

externally, where astringency is the only indication. It is certainly a very powerful styptic, and is to be looked on simply as such; to the sudorific, antipile, lential, and other virtues attributed to it, it has no other claim than in consequence of its astringency, and of the antiseptic power which it has in common with other vegetable styptics. The largest dose of the root in powder is one drachm.

BOLE.

Boles are viscid clayey earths, less coherent and more friable than clay strictly so called. They are soft and unctuous to the touch, adhere to the tongue and by degrees melt in the mouth, imprefusing a slight sense of astringency. A great variety of these kinds of earths were formerly used in medicine; the principal of which are the following.

(1) *BOLEUS ARMENIA* [Succ.]
Armenian bole, or bole armenic.

Pure Armenian bole is of a bright red colour, with a tinge of yellow: It is one of the hardest and most compact of the bodies of this class, and not smooth or glossy like the others; but generally of a rough dusky surface. It raises no effervescence with acids.

(2.) *BOLEUS GALLICUS* [Lond.]

French bole.

The common French bole is of a pale red colour, variegated with irregular specks or veins of white and yellow. It is much softer than the foregoing; and slightly effervesces with acids.

(3) *BOLEUS BLESENSIS.* Bole of Blois.

This is a yellow bole, remarkably

bly lighter than the former, and than most of the other yellow earths. It effervesces strongly with acids.

(4) *Polus BOHEMICA.* Bohemian bole.

This is of a yellow colour, with a cast of red, generally of a flaky texture. It is not acted on by acids.

(5) *TERRA LEMNIA.* Lemnian earth.

This is a pale red earth; slightly effervescing with acids.

(6) *TERRA SILESIAICA.* Silesian earth.

This is of a brownish yellow colour: acids have no sensible effect on it. These and other earths, made into little masses, and stamped with certain impressions, are called *terra sigillata*.

The boles of Armenia and Elis, and the Lemnian earth, are rarely met with genuine in the shops; the coarser boles, or white clay coloured with ochre, caput mortuum of vitriol, &c. frequently supply their place. The genuine may be distinguished by their subsiding uniformly from water, without any separation of their parts; the genuine yellow boles retain their colour, or have it deepened, in the fire: while the counterfeit sorts burn red.

These earths have been recommended as astringent, sudorific, and alexipharmic; and they have been used in diarrhoeas, dysenteries, hemorrhagies, and in malignant and pestilential distempers. In intestinal fluxes, and complaints in the first passages, from thin acrimonious humours, they may doubtless be of some use; but the virtues ascribed to them in the o-

ther cases appear to have no foundation.

BORRAGO [Gen.] *Herba.*

Borago officinalis Lin.

Borage; the herb.

This is a rough plant, clothed with small prickly hairs; it grows wild in waste places, and upon old walls. An exhilarating virtue has been attributed to the flowers of borage, but they appear to have very little claim to any virtue of this kind, and seem to be altogether insignificant.

BORAX [Lond. Ed.]

Natron boracicum.

Borax, or tincal.

This is a saline substance, brought from the East Indies in great masses, composed of a few large crystals, but chiefly of smaller ones, partly white and partly green, joined together as it were by a greasy yellow substance, intermixed with sand, small stones, and other impurities: the purer crystals, exposed to the fire, melt into a kind of glass, which is nevertheless soluble in water.

This salt, dissolved and crystallised, forms small transparent masses: the refiners have a method of shooting it into large crystals; but these differ in several respects from the genuine salt, in so much that Cramer calls them not a purified, but adulterated borax. Experiments have clearly shown, that it consists of fossil alkali in some degree neutralised by a peculiar acid.

The medical virtues of borax have not been sufficiently ascertained by experience: it is supposed to be, in doses of half a drachm or two scruples, diuretic, emmenagogue, and a promoter of delivery. Mr Bisset, in an essay on the

the medical constitution of Great Britain, recommends a solution of this salt in water, as the most powerful dissolvent yet known, of aphthous crusts in the mouth and fauces of children. And for the same purpose also a small quantity of it is often applied in the form of powder mixed up with sugar. There are strong reasons to believe, that the virtues of borax are much greater than they are in general supposed to be; and that it may be more extensively used with advantage.

BOTHRYS [Succ.] *Herba, semina.*

Chebotodium Botrys Lin.

Jerusalem oak: the leaves and seed.

This plant is cultivated in gardens. It has a strong not disagreeable smell, and a warm somewhat pungent taste. It is recommended as a carminative pectoral; and it has also been highly extolled as an emmenagogue. Infusions of it may be drank as tea: and in this form it has been recommended in cases of chronic catarrh. But the proper menstruum for the active matter, both of the leaves and seed, is rectified spirit.

BRASSICA [Gen.] *Herba, semina.*

Brassica oleracea Lin.

White and red cabbages, Cauliflower, Brocoli, &c.

These are cultivated in gardens rather for culinary than medicinal use. They are all supposed to be hard of digestion, to afford little nourishment, and to produce flatulencies; though probably on no very good foundation. They tend strongly to putrefaction, and run into this state sooner than almost any other vegetable: when putrid,

their smell is likewise the most offensive, greatly resembling that of putrified animal substances. Hence it seems reasonable to conclude, that few of the oleraceous herbs are more easily soluble in the stomach, more nutritious or less remote from the nature of animal food. It is undeniable, that in general at least they are not unwholesome; that they do not induce or promote a putrid disposition in the body; but on the contrary prove a salubrious aliment; that when taken freely, they tend to loosen the belly; and that their laxative matter is extracted by long boiling in water. Of all these plants, cauliflower is reckoned the easiest of digestion. The white cabbage is the most fetid; and the red the most emollient or laxative; a decoction of this last is recommended in some disorders of the breast and in hoarseness.

Sliced cabbages, casked up with salt, &c. becomes sour, and is used in Germany at table under the name of sauerkraut; and it has lately been introduced as an article of diet with the British forces, either in garriçons besieged, or on long voyages. It is now clearly demonstrated, that in these situations it operates as a most powerful preventive of the scurvy; and that it has even had very great influence in curing the disease after it has taken place.

Cabbage has also been used externally applied. The leaves gently bruised are often applied to parts previously blistered, with the effect of promoting a discharge. They excite a considerable watery discharge through the skin in cases of anasarca, particularly when applied to the ancles: And they have sometimes even the effect of inducing vesications. As thus externally applied, they have in some instances

instances produced a complete discharge of the water in cases of anasarca.

BRASSICA MARINA

Brun.

Convolvulus Soldanella Lin.

Sea-coleworts, Scots scurvygrass, or soldanella: the leaves.

This is a trailing plant, growing on the sea beach in many parts of the north of England. The roots, leaves, and stalks, yield a milky juice.

Soldanella is a strong and violent cathartic, and hence deservedly rejected from practice. Those who recommend its use differ considerably with regard to the dose; some direct half a drachm; others three drachms, and others a whole handful.

BRITANNICA, See HYDRO-LAPATHUM.

BRYONIA [Ed.] Radix.

Bryonia alba Lin.

White bryony, or wild vine; the roots.

This is a rough plant, growing on dry banks under hedges, and climbing upon the bushes. The roots are large, sometimes as thick as a man's thigh; their smell, when fresh, is strong and disagreeable; the taste nauseously bitter, acrid, and biting; the juice is so sharp, as in a little time to excoriate the skin: in drying, they lose great part of their acrimony, and almost the whole of their scent.

Bryony root is a strong irritating cathartic; and as such has sometimes been successfully exhibited in maniacal cases, in some kinds of dropsies, and in several chronic disorders, where a sudden stimulus is required. An extract prepared by water, acts more mildly and

with greater safety than the root in substance; given from half a drachm to a drachm, it is said to prove a gentle purgative, and likewise to operate powerfully by urine.

Bryony root, applied externally, is said to be a powerful discutient. Hence, although this as well as many other drastic and active articles are now rejected by the London college, yet it ought to be retained, and a place should also be given in our pharmacopoeias to the extract.

BUGLOSSUM [Gen.] Radix.

folia.

Anchusa officinalis Lin.

Garden bugloss; the root and leaves.

This is a rough, hairy plant, resembling borage, but less prickly: a wild sort is commonly met with in hedges and among corn, which differs from the garden one in being smaller. Bugloss has a slimy sweetish taste, accompanied with a kind of coolness: the roots are the most glutinous, and the flowers the least so. The flowers were supposed to be cordial; the only quality they have that can entitle them to this appellation, is, that they moderately cool and soften without offending the palate or stomach; and thus, in warm climates, or in hot diseases, may in some measure refresh the patient; but at present they are very rarely employed.

BURSA PASTORIS [Brun.]

Folia.

Thlapsi bursa pastoris Lin.

Shepherd's purse; the leaves.

This plant is common in waste places, and is found in flower all the summer. Shepherd's-purse has long been celebrated as an astringent, and strongly recommended in diarrhoeas;

diarrhoeas, dysenteries, uterine fluors, and in general in all diseases where astringents of any kind can avail. Some have esteemed it so powerful a styptic, as scarcely to be safely exhibited internally. Others have thought it to be of a hot fiery nature, and supposed it to stop fluxes and hæmorrhagies, by coagulating the juices like alcohol, and burning or searing the orifices of the vessels. The sensible qualities of shepherds-purse discover little foundation for either of these opinions; it has no perceptible heat, acrimony, or pungency, and scarcely any astringency; the taste is almost merely herbaceous, so as sufficiently to warrant the epithet given this plant by Mr Ray, *Fatum*.

BUXUS [Brun.] *Folia, Lignum,*

Buxus sempervirens Lin.

Box tree; the leaves and wood. The box is a small tree, growing wild in some places of Kent and Surry. The wood is of a yellow colour, more solid, compact, and ponderous than any other of the European woods. The leaves have a strong nauseous taste, and, when fresh, a fetid smell: they are said, to purge violently, in the dose of a drachm. A decoction of the wood is recommended as powerfully sudorific, preferable even to guaiacum: but the taste readily discovers that it wants the qualities of that wood. Neither the wood nor leaves are at present employed for any medicinal purpose in Britain; and they are now rejected by our colleges: But from their active qualities, particularly that of the leaves, they deserve some attention, and may perhaps be advantageously substituted for expensive articles imported from abroad.

CACOA [Sut.] *Nutii,*

Theobroma Cacao Lin.

Chocolate nuts.

There are the fruit of an American tree resembling the almond. The tree, though small, bears a large fruit, shaped like a cucumber, which contains thirty or more of the nuts. These, by pressure, yield a considerable quantity of a fluid oil. Boiled in water, they give out a large portion of a sebaceous matter, which congeals on the surface of the liquor as it cools. The principal use of these nuts is for the preparation of chocolate, which is a mild, unctuous, nutritious fluid, of great service in consumptive disorders; especially if made with milk, and with only a small portion of aromatics.

CAJEPUT [Edin.] *Oleum.*

Maleuca leucadendron Lin.

Cajeput oil,

This article is mentioned by several writers on the materia medica as being in very high esteem among the eastern nations: though it had been long in some of the foreign pharmacopœias, it never entered the list of the British till the last Edition but one of the Edinburgh pharmacopœia. It is said to be obtained by distillation, from the fruit of the maleuca leucadendron. When brought into this country it is a liquid of a greenish colour, of a fragrant, but at the same time a very peculiar odour, and of a warm pungent taste. Some authors, however, represent this oil as being, when of the best quality, a white or colourless fluid; and it has been said by the authors of the dispensatory um Brunsvicensis, when prepared in Europe from the seeds sent from India, to be entirely of this appearance.

Hitherto

Hitherto the oleum cajeput has been but little employed, either in Britain or on the continent of Europe; but in India it is used both internally, and externally, and is highly extolled for its medical properties. It is applied externally where a warm and peculiar stimulus is requisite; it is employed for restoring vigour after luxations and sprains, and for easing violent pain in gouty and rheumatic cases, in tooth-ach, and similar affections; but it has been chiefly celebrated as taken internally, and it is particularly said to operate as a very powerful remedy against tympanitic affections.

CALAMINARIS LAPIS

[*Lond. Ed.*]

Zincum calaminaris.

Calamy, or calamine stone.

This mineral is found plentifully in England, Germany, and other countries, either in distinct mines, or intermixed with the ores of different metals. It is usually of a greyish, brownish, yellowish, or pale reddish, colour; considerably hard, though not sufficiently so to strike fire with steel. Calamine is generally roasted or calcined before it comes into the shops, in order to separate some sulphureous or arsenical matter, which the crude mineral is supposed to contain, and to render it more easily reducible into a fine powder. In this state it is employed in collyria, against defluxions of thin acrid humours upon the eyes; for drying up moist, running ulcers; and healing excoriation. It is the basis of the *Ceratum lapidis calaminaris*.

CALAMUS AROMATICUS

[*Lond.*] *Radix.*

ACORUS [*Ed.*] *Radix.*

Acorus Calamus Lin.

Sweet flag; the roots.

This flag resembles, as to its leaves, the common *iris*; but in other respects differs greatly from it: the stalk grows at a little distance from the leaves; the lower half, up to where the flowers come forth, is roundish; the part above this, broad like the other leaves, the flowers are very small, whitish, and stand in a kind of head about the size of a finger. This plant grows plentifully in rivulets and marshy places about Norwich, and other parts of this island, in the canals of Holland, in Switzerland, and in other countries of Europe. The shops have been usually supplied from the Levant with dried roots, which do not appear to be superior to those of our own growth.

The root of acorus is full of joints, crooked, somewhat flattened on the sides, internally of a white colour, and loose spongy texture: its smell is strong; the taste warm; acrid, bitterish, and aromatic; both the smell and taste are improved by exsiccation. This root is generally considered as a carminative and stomachic medicine, and as such is sometimes used in practice. It is said by some to be superior in aromatic flavour to any other vegetable that is produced in these northern climates: but this assertion is by no means strictly true. It is, nevertheless, a sufficiently elegant aromatic. It was formerly an ingredient in the mithridate and theriaca of the London pharmacopœia; and in the aromatic and stomachic tinctures, and compound arum powder, of the Edinburgh; but it is now rejected from these, and it does not at present enter any official preparation. The fresh root, candied after the manner directed for

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candying cryngo root, is said to be used at Constantinople as a preservative against epidemic diseases. The leaves of this plant have a sweet fragrant smell, more agreeable, though weaker than that of the roots; but they have no place either in the British or foreign pharmacopœias.

CALENDULA [Brun.] Flor.

Calendula Officinalis Lin.

Garden marigold; the flower.

This herb is common in gardens, where it is found in flower greatest part of the summer. Marigold flowers were supposed to be aperient and attenuating; and also cardiac, alexipharmic, and sudorific: they have been principally celebrated in uterine obstructions, in the jaundice, and for throwing out the small-pox. Their sensible qualities give little foundation for these virtues: they have scarcely any taste, and no considerable smell. The leaves of the plant discover a viscid sweetishness, accompanied with a more durable saponaceous pungency and warmth: these seem capable of answering some useful purposes, but at present they are so little employed in Britain, that they have now no place in our pharmacopœias, and they are also rejected from several of the latest and best foreign ones.

CALX [Lond.]

Lapis calcareus purus recens usus.

CALX VIVA [Edin.] *Ex lapide calcareo & Ex testis conchyliorum.*

Quicklime.

Quicklime is usually prepared among us by calcining certain stones of the chalky kind. All chalks and marbles burn into quicklime; with this difference that, the more

compact the stone, the stronger is the lime. In maritime countries, in defect of the proper stones, sea-shells are used, which afford a calx agreeing in most respects with the stone limes.

All these limes are, when fresh burnt, highly acrimonious and corrosive, being thus freed from fixt air. In this state they are employed in some external applications as a depilatory; for rendering sulphur soluble in water, and for depriving alkalis of their fixt air, thus increasing their power, either for the purposes of a caustic, or to enable them more readily to dissolve oils for making sope. If the lime be exposed for a length of time to the air, it absorbs water; falls by degrees into a powder; and, by attracting fixt air, loses its acrimony.

Water poured directly upon quicklime, takes up a portion of it: the solution has a strong taste, somewhat styptic, drying the mouth, and accompanied with a kind of sweetness. This liquor does not effervesce with acids, but is rendered by fixt air turbid and milky: as preventing the coagulation of milk, it is sometimes used along with milk diet; agitated with expressed oils it unites with them into a thick compound, recommended and much used against burns and inflammations. Both the simple solution of the lime, and the solution impregnated with other materials, are directed as officinal, under the title of lime water.

Lime-water, drank to the quantity of a quarter of a pint three or four times a-day, and long continued, has been found serviceable in scrophulous cases, and other obstinate chronic disorders. It frequently promotes urine and perspiration;

spiration: for the most part it binds the belly, and sometimes produces troublesome costiveness, unless this effect be occasionally provided against, by the interposition of proper medicines. It does good service in debility and laxity of the viscera in general; in those of the uterine and femoral vessels, flor albus, chronic menorrhagia, and gleet, it is particularly recommended. It has been used as a lithontriptic: and although incapable of dissolving calculi in the urinary organs, yet under its use calculous patients have experienced great relief. In the form of injection it is very effectual in killing and bringing off ascarides.

CAMPHORA [Lond. Ed.]

Laurus Camphora Lin.

Camphor.

Camphor is a very peculiar substance, obtained in the form of a solid concrete, chiefly extracted from the wood and roots of a tree growing in Sumatra and Japan. The former is by much the best. As it first sublimes from the wood, it appears brownish, composed of semipellucid grains mixed with dirt: in this state it is exported by the Dutch, and purified by a second sublimation; after which it is reduced into loaves (in which it is brought us) probably by fusion in close vessels; for it does not assume this form in sublimation. Camphor is procurable in small quantities from various other vegetables by distillation. It may be considered as a peculiar concrete, very volatile essential oil.

Pure camphor is very white, pellucid, somewhat unctuous to the touch; of a bitterish, aromatic, acrid taste, yet accompanied

with a sense of coolness; of a smell somewhat like that of rosemary, but much stronger. It is totally volatile and inflammable; soluble in vinous spirits, oils, and the mineral acids; not in water, alkaline liquors, or the acids of the vegetable kingdom. This concrete is esteemed one of the most efficacious diaphoretics; and has long been celebrated in malignant fevers, and epidemical distempers. In delirium, where opiates fail of procuring sleep, and aggravate the symptoms, this medicine frequently succeeds.

Dr Alexander, some time ago a practitioner in Edinburgh, made many experiments on this article, particularly by taking it himself in large doses. On taking a scruple of camphor, he found his pulse somewhat less frequent: on taking two, his pulse fell from 77 to 70, but returned to 77 in less than half an hour; at which time vertigo and a gradual abolition of consciousness came on, succeeded by violent retchings, convulsions, and mania, the pulse rising to 100. He then began to recover his recollection, felt extremely hot, with tremors of the whole body. By using warm water he threw up the camphor, the effects of which gradually wore off, only he felt his body for two days very sore and rigid.

Frederick Hoffman has written an express dissertation *De Camphoræ usu interno securissimo et præstantissimo*. The substance of his observations is, that camphor seems to penetrate very quickly through the whole body, and increase perspiration: that though given to the quantity of half a drachm, dissolved in spirit of wine and duly diluted, it does not raise the pulse

or occasion any heat, but rather causes a sense of coolness about the præcordia: that on continuing its use for some time, the blood became sensibly more fluid, and the quantity of watery serum, which the habit before abounded with, was considerably diminished: that in malignant fevers, and all disorders, whether acute or chronic, proceeding from an acrid or putrescent state of the juices, camphor has excellent effects, correcting the acrimony, expelling the putrid morbid matter through the cutaneous pores, and preventing an inflammation or sphacelus, where there is previously any disposition thereto: that, by strengthening the vessels, it restrains hæmorrhagies happening in acute fevers, and promotes critical and periodical evacuations; that it expels even the venereal virus; that he has known examples of the lues being cured by camphor alone, a purgative only being premed; and that in recent infections he has found no medicine equal to it in efficacy. In inflammatory cases, where there is a tendency to mortification, intense heat, thirst, or where the skin is dry and parched, whether before or after a delirium has come on, small doses of camphor joined with nitre produced happy effects, almost immediately relieving the symptoms, occasioning a calm sleep and plentiful sweat, without fatiguing the patient. He farther observes, that this simple, by its antiphlogistic quality, prevents the ill effects of the more irritating medicines; that cantharides and the acid stimulating cathartics and diuretics, by the admixture of a small proportion of camphor, become much more mild and safe in their operation.

The common dose of camphor

is from one grain to ten. It enters several official preparations, both for external and internal use; particularly the *Linimentum camphoræ*, *Linimentum Japonis*, *Linimentum opiatum*, *Oleum camphoratum*, *Spt. vinosus camphoratus*, *Mistura camphorata*, *Tinctura opii camphorata*, &c.

In modern practice, it is externally employed chiefly to diminish inflammation, to disperse tumors, to obviate gangrene, to stimulate in local palsy, and to allay rheumatic and paralytic pains. Internally, it is given in nervous affections with a view of exciting the vis vitæ, and alleviating spasmodic complaints: with the same view to the vis vitæ, to obviate putrescence, and to procure sleep, it is used in fevers of the typhous kind. Some recommend it as singularly useful in cases of ardor urinæ; and others find it efficacious in what are called nervous headaches.

CANCER, *Chele* [Lond.]
Chela, *Lapilli vulgo oculi diæi*
[Ed.]

Cancer Pagurus & Asellus Lin.

Crab claws are the black tips of the common crab (*Cancer Pagurus*.) After being broken down and well washed in boiling water, they are reduced to powder, and employed as an absorbent. They consist of a calcareous earth, and of course neutralize those acids with which they come in contact in the primæ viæ. But besides an earth, they contain also a glutinous animal matter, which gives them a tendency to concreate in the stomach and bowels. They enter some official preparations, as the *Pulvis chelærum cancerorum compositus*.

Crabs eyes, as they have been very improperly called, are concretions

tions formed in the inside of the thorax of the Craw-fish [*Cancer Asellus*] there is one on each side adhering to the shell of the animal: they are generally about the size of peas, or larger: of a spherical shape, but a little flattened on one side. They are of a white colour, but sometimes with a reddish or blueish cast, and internally of a laminated structure. The greatest part of them are the produce of Muscovy, particularly of the river Don, where the dead crabs are laid upon the banks in heaps to putrefy, after which the stones are picked out.

Crabs claws and stones are employed as absorbents, especially where acidity is superabundant in the stomach, as in heartburn: they are also very useful in diarrhas proceeding from acidity, as they do not, like other absorbent earths form, with the acids they meet with in the bowels, purgative salts.

Crabs stones are said by most writers on the materia medica to be frequently counterfeited with tobacco-pipe clay, or compositions of chalk with mucilaginous substances. This piece of fraud, if really practised, may be very easily discovered; the counterfeits wanting the leafy texture which is observed on breaking the genuine; more readily imbibing water; adhering to the tongue; and dissolving in vinegar, or the stronger acids diluted with water, either entirely, or not at all, or by piecemeal; while the true crabs stones, digested in these liquors, become soft and transparent, their original form remaining the same: this change is owing to the earthy part, on which depended their opacity and hardness, being dissolved by the gentle action

of the acid, which leaves the conglutinating matter entire.

CANELLA ALBA [*Lond.*

Ed.] Cortex.

Winterania Canella Lin.

Canella alba.

This bark is brought to us rolled up into long quills, thicker than cinnamon, and both outwardly and inwardly of a whitish colour, lightly inclining to yellow. It is the produce of a tall tree growing in great plenty in the low lands in Jamaica, and other West India Islands. Infusions of it in water are of a yellowish colour, and smell of the canella; but they are rather bitter than aromatic. Tinctures in rectified spirit have the warmth of the bark, but little of its smell. Proof-spirit dissolves the aromatic as well as the bitter matter of the canella, and is therefore the best menstruum.

The canella is the interior bark, freed from an outward thin rough one, and dried in the shade. The shops distinguish two sorts of canella, differing from each other in the length and thickness of the quills: they are both the bark of the same tree, the thicker being taken from the trunk, and the thinner from the branches. This bark is a warm pungent aromatic, not of the most agreeable kind: nor are any of the preparations of it very grateful.

Canella alba is often employed where a warm stimulant to the stomach is necessary, and as a corrigent of other articles. It is now, however, little used in composition by the London college; the only official formula which it enters being the *pulvis aloeticus*: but with the Edinburgh college it is an ingredient in the *tinctura amara*,

amara, vinum amarum, vinum rhei, &c. It is useful as covering the taste of some other articles.

CANABIS [*Brun.*] *Semen.*

Canabis sativa Lin.

Hemp; the seed.

This plant, when fresh, has a rank narcotic smell: the water in which the stalks are soaked, in order to facilitate the separation of the tough rind for mechanic uses, is said to be violently poisonous, and to produce its effects almost as soon as drunk. The seeds also have some smell of the herb; their taste is unctuous and sweetish; on expression they yield a considerable quantity of insipid oil; hence they are recommended (boiled in milk, or triturated with water into an emulsion) against coughs, heat of urine, and the like. They are also said to be useful in incontinence of urine, and for restraining venereal appetites; but experience does not warrant their having any virtues of this kind. Although the seeds only have hitherto been principally in use, yet other parts of the plant seem to be more active, and may be considered as deserving farther attention.

CANTHARIS [*Lond. Ed.*]

Meloe vesicatorius Lin.

The Spanish fly.

These insects are of a shining green colour, intermixed with more or less of a blue and a gold yellow. They are found in Spain, Italy, and France; the largest come from Italy, but the smaller kind from Spain are preferred.

Cantharides are extremely acrimonious; applied to the skin, they first inflame, and afterwards excoriate the part, raising a more per-
fect blister than any of the vegetable

acrids, and occasioning a more plentiful discharge of serum. Even the external application of cantharides is often followed by a strangury, accompanied with thirst and feverish heat; this inconvenience may be remedied by soft unctuous or mucilaginous liquors liberally drunk. The strangury is probably owing to the action of the absorbed active parts on the neck of the bladder.

Cantharides taken internally, often occasion a discharge of bloody urine, with exquisite pain; if the dose be considerable, they seem to inflame and exulcerate the whole intestinal canal; the stools become mucous and purulent; the breath fetid and cadaverous; intense pains are felt in the lower belly; the patient faints, grows giddy, raving mad, and dies. All these terrible consequences have sometimes happened from a few grains. Herman relates, that he has known a quarter of a grain inflame the kidneys, and occasion bloody urine with violent pain. There are nevertheless cases in which this stimulating fly, given in larger doses, proves not only safe, but of singular efficacy for the cure of diseases that yield little to medicines of a milder class. In phlegmatic habits, where the viscera are overloaded, and the kidneys and ureters obstructed with mucous matter, cantharides have excellent effects: here the abounding mucus defends the solids from the acrimony of the fly, till it is itself expelled; when the medicine ought to be discontinued. Groenvelt employed cantharides with great success in dropsies, obstinate suppressions of urine, and ulcerations of the bladder: giving very considerable doses made into boluses with camphor; and interposing large draughts of emulsions, milk,

milk, or other emollient liquids; by this means the excessive irritation which they would otherwise have occasioned, was in a great measure prevented. The camphor did not perhaps contribute so much to this effect, as is generally imagined; since it has no sensible quality that promises any considerable abatement of the acrimony of cantharides: nitre would answer all that the camphor is supposed to do: this, with milk, or emollient mucilaginous liquors, drank in large quantity, are the best correctors. Cantharides, in very small doses, may be given with safety also in other cases. Dr Mead observes, that the obstinate gleet which frequently remain after the cure of venereal maladies, and which rarely yield to balsamic medicines, are effectually remedied by cantharides; and that no one remedy is more efficacious in leprosy disorders; in which last, proper purgatives are to be occasionally taken during the use of the cantharides. The best and safest preparation of cantharides for these purposes, is a spirituous tincture; and indeed in all cases the tincture is preferable, for internal use, to the fly in substance.

On the idea of the stimulus, accumulated about the genital organs, being propagated to parts in the neighbourhood, the internal use of that tincture has also been recommended in diabetes, leucorrhœa, amenorrhœa, &c. but from the dangerous effects sometimes observed from seemingly inconsiderable doses, cantharides are now almost entirely confined to external application.

They are sometimes used as merely rubefacient, as in friction, with the tincture, on indolent swellings, or in form of weak plaster: but most commonly in order to blis-

ter, chiefly with a view of relieving torpor, of determining the impetus of the blood from the part affected to the part of application, of discharging serum, and of relieving spasms in certain internal parts.

The virtues of cantharides are extracted by rectified spirit of wine, proof spirit, and water; but do not arise in distillation. The watery and spirituous extracts blister as freely as the fly in substance: while the fly remaining after the several menstrua have performed their office, is to the taste insipid, and does not in the least blister, or inflame the skin; hence the *Unguentum insusum cantharidum*: But besides this, cantharides are the active basis of several other officinal preparations, as the *Tinctura cantharidis*, *Emplastrum cantharidis*, *Unguentum cantharidis*, &c.

CAPPARIS [Brun.] *Radix cortex et florum gemma.*

Capparis spinosa Lin.

Caper bush; the bark of the root and buds of the flowers.

This is a low prickly bush, found wild in Italy and other countries; it is raised with us by sowing the seeds upon old walls, where they take root between the bricks, and endure for many years.

The bark of the root is pretty thick, of an ash colour, with several transverse wrinkles on the surface; cut in slices and laid to dry, it rolls up into quills. This bark has a bitterish acid taste; it is reckoned aperient and diuretic; and recommended in several chronic disorders, for opening obstructions of the viscera.

The buds, pickled with vinegar, are used at table. They are supposed to excite appetite, and promote digestion.

CARDAMINE

CARDAMINE [Lond. Ed.]

Flos.

Cardamine pratensis Lin.

Ladies Smock; the flower.

The cardamine is a perennial plant, which grows in meadow grounds, sends forth purplish flowers in the spring; and in its sensible qualities resembles the *nasurtium aquaticum*. Long ago it was employed as a diuretic; and of late it has been introduced in nervous diseases, as epilepsy, hysteria, chorea, asthma, &c. A drachm or two of the powder is given twice or thrice a day. It has little sensible operation, except that it sometimes promotes sweat.

CARDAMOMUM MINUS

[Lond. Edin.] Semen.

Anomum repens, Sonnerati.

Lesser cardamom.

Formerly a place was given in our pharmacopœias to different kinds of cardamom seeds, and particularly to the large as well as the small; but the latter, tho' scarcely half the size of the former, are considerably stronger both in smell and taste. Hence this sort has long supplied the place of the other in the shops, and is the only one now directed.

Cardamom seeds are a very warm, grateful, pungent, aromatic, and are frequently employed as such in practice: they are said to have this advantage, that notwithstanding their pungency, they do not, like those of the pepper kind, immoderately heat or inflame the bowels. Both water and rectified spirit extract their virtues by infusion, and elevate them in distillation; with this difference, that the tincture and distilled spirit are considerably more grateful than the infusion and distilled water: the watery infusion appears turbid and

mucilaginous: the tincture made in spirit, limpid and transparent. The husks of the seeds, which have very little smell or taste, may be commodiously separated, by committing the whole to the mortar, when the seed will readily pulverise, so as to be freed from the shell by the sieve: this should not be done till just before using them; for if kept without the husks, they soon spoil by losing their flavour. The official preparations of these seeds are spirituous tinctures, simple and compound; they are employed also as a spicy ingredient in several of the official compositions.

CARDUUS BENEDICTUS

[Lond. Ed.] Herba.

Centaurea benedicta Lin.

Blessed thistle; the plant.

This is an annual plant, cultivated in gardens: it flowers in June and July, and perfects its seeds in the autumn. The herb should be gathered when in flower, suddenly dried and kept in a very dry place to prevent its rotting or growing mouldy, which it is very apt to do. The leaves have a penetrating bitter taste, not very strong or very durable, accompanied with an ungrateful flavour, which they are in a great measure freed from by keeping. Water extracts, in a little time, even without heat, the lighter and more grateful parts of this plant: if the digestion be continued for some hours, the disagreeable parts are taken up; a strong decoction is very nauseous and offensive to the stomach. Rectified spirit gains a very pleasant bitter taste, which remains uninjured in the extract.

The virtues of this plant seem to be little known in the present practice. The nauseous decoction is sometimes used to provoke vomiting;

miting; and a strong infusion to promote the operation of other emetics. But this elegant bitter, when freed from the offensive parts of the herb, may be advantageously applied to other purposes. We have frequently experienced excellent effects from a slight infusion of carduus in loss of appetite, where the stomach was injured by irregularities. A stronger infusion made in cold or warm water, if drank freely, and the patient kept warm, occasions a plentiful sweat, and promotes the secretions in general.

The seeds of this plant are also considerably bitter, and have been sometimes used with the same intention as the leaves.

CARICA [*Lond. Ed.*] *Fruſus.*
Ficus Carica Lin.

The fig; the dried fruit.

The principal of these is as a soft, emollient sweet; with this intention they enter the *Decodum bordei compoſitum* and *Electuarium ſenna*. They are also esteemed by some as suppuratives, and hence have a place in maturing cataplasms; and they are sometimes applied by themselves, as warm as they can easily be borne, to promote the suppuration of a phlegmon, particularly when so situated that other cataplasms cannot easily be kept applied.

CARLINA [*Gen.*] *Radix.*
Carlina acaulis Lin.

1. Carline thistle; the root.

This is a very prickly sort of thistle, growing spontaneously in the southern parts of France, Spain, Italy, and the mountains of Switzerland; from whence the dried roots are brought to us. This root is about an inch thick, externally of a pale rusty brown co-

lour, corroded as it were on the surface, and perforated with numerous small holes, appearing when cut as if worm-eaten. It has a strong smell, and a subacid, bitterish, weakly aromatic taste. Carlina is considered as a warm diaphoretic and alexipharmic; and has been for some time greatly esteemed by foreign physicians, but never came much into use among us: the present practice has entirely rejected it; nor is it often to be met with in the shops. Hoffman relates that he has observed a decoction of it in broth to occasion vomiting.

CARPOBALSAMUM

[*Brun.*] *Fruſus.*

Amyris Gileadenſis Lin.

Carpobalsam; the fruit.

This is the fruit of the tree that yields the opobalsam or balsam of Gilead. It is about the size of a pea, of a whitish colour, inclosed in a dark brown wrinkled bark. This fruit, when in perfection, has a pleasant warm glowing taste, and a fragrant smell, resembling that of the opobalsamum itself. It is very rarely found in the shops; and such as we meet with, has almost lost all its smell and taste. It had formerly a place in the mithridate and theriaca formulæ, now banished from our pharmacopœias; but even then the college permitted cubebs to be employed as a substitute for the carpobalsamum, which could seldom be procured; and it is probably on this account that it has now no place in our lists.

CARTHAMUS [*Brun.*] *Se-*
men.

Carthamus tinctorius Lin.

Bastard saffron; the seeds.

The bastard saffron is a kind of

of thistle, with only a few prickles about the edges of the leaves. It is cultivated in large quantity in some places of Germany; from whence the other parts of Europe are supplied with the flowers as a colouring drug, and the seeds as a medicinal one. The flowers, well cured, are not easily distinguishable by the eye from saffron; but their want of smell readily discovers them. The seeds are about a quarter of an inch long, white, smooth, of an oblong roundish shape, yet with four sensible corners, and are so heavy as to sink in water; of a viscid sweetish taste, which in a little time becomes acrid and nauseous. They have been celebrated as a cathartic: they operate very slowly, and for the most part disorder the bowels, especially when given in substance; triturated with aromatic distilled waters, they form an emulsion less offensive, yet inferior in efficacy to more common purgatives.

CARUON [Lond.]

CARVI [Ed.] Semen.

Carum carvi Lin.

Caraway; the seeds.

Caraway is an umbelliferous plant, cultivated with us in gardens both for culinary and medicinal use. The seeds have an aromatic smell, and a warm pungent taste. They are frequently employed, as a stomachic and carminative, in flatulent colics, and the like.

They were formerly the basis of several officinal preparations, and entered many compositions by way of a corrigent. But although they be now less frequently employed than before, yet a place is still given to their essential oil and distilled spirit; and they enter the compound spirit of juniper, the

tincture of senna, and some other compositions.

CARYOPHYLLUS ARO.

MATICUS [Lond.] *pericarpium immaturum et ejus oleum essentiale.*

CARYOPHYLLA ARO.

MATICA [Edin.] *Fructus & oleum ejus essentiale.*

Caryophyllus aromaticus Lin.

Cloves.

Cloves are the fruit of a tree growing in the East-Indies. In shape, they somewhat resemble a short thick nail.

Cloves have a very strong agreeable aromatic smell, and a bitterish pungent taste, almost burning the mouth and fauces. The Dutch, from whom we have this spice, frequently mix it with cloves which have been robbed of their oil: These, though in time they regain from the others a considerable share both of taste and smell, are easily distinguishable by their weaker flavour and lighter colour. Cloves, considered as medicines, are very hot stimulating aromatics, and possess in an eminent degree the general virtues of substances of this class. An extract made from them with rectified spirit is excessively hot and pungent: the distilled oil has no great pungency; an extract made with water is nauseous and somewhat styptic. The only officinal preparation of them is the essential oil. Both the cloves themselves and their oils are ingredients in many officinal compositions.

CARYOPHYLLUM RU-

BRUM [Lond.] *Flos.*

CARYOPHYLLA RUBRA

[Edin.] *flores.*

Dianthus Caryophyllus Lin.

Clove July-flowers.

A great variety of these flowers are

are met with in our gardens: those used in medicine ought to be of a deep crimson colour, and a pleasant aromatic smell, somewhat like that of cloves: many sorts have scarcely any smell at all.

They are said to be cardiac and alexipharmic. Simon Pauli relates, that he has cured many malignant fevers by the use of a decoction of them; which he says powerfully promotes sweat and urine, without greatly irritating nature, and also raises the spirits and quenches thirst. At present the flowers are chiefly valued for their pleasant flavour, which is entirely lost even by light coction; hence the college direct the syrup, which is the only official preparation of them, to be made by infusion.

CARYOPHYLLATA

[Brun.] *Radix.*

Geum urbanum Lin.

Avens; the root.

Avens is a rough plant found wild in woods and hedges. The root has a warm, bitterish, astrigent taste, and a pleasant smell, somewhat of the clove kind, especially in the spring, and when produced in dry warm soils. It has been employed as a stomachic, and for strengthening the tone of the viscera in general: it is still in some esteem in foreign countries, though not taken notice of among us. It yields on distillation an elegant odoriferous essential oil, which concretes into a stony form.

Besides the *geum rivale*, another species of the same genus has a place in some pharmacopœias, under the title of *Caryophyllata aquatica*. The root of this species, which is larger than the other, is said to be employed by the Indi-

ans in South America for the cure of intermittents, and to be equally successful with the Peruvian bark. Dr Withering mentions, that the powder of the root is used for this purpose by the Canadians.

CASCARILLA [Lond. Ed.]

Cortex.

Croton Eleutheria Lin.

Cascarilla; the bark.

This bark is imported into Europe from the Bahama islands, and particularly from one of them of the name of Eleuthera: from which circumstance it was long known by the title of Eleutheria. The cascarilla is in general brought to us either in curled pieces, or rolled up into short quills, about an inch in width, somewhat resembling in appearance the Peruvian bark. It is covered on the outside with a rough whitish matter; and in the inside it is of a brownish cast. When broken, it exhibits a smooth close dark brown surface.

This bark, when freed from the outer whitish coat, which is insipid and inodorous, has a light agreeable smell, and a moderately bitter taste, accompanied with a considerable aromatic warmth. It is easily inflammable, and yields when burning a very fragrant smell resembling that of musk; a property which distinguishes the cascarilla from all other barks. It was introduced into Europe about the end of the last century, and seems first to have been used in Germany, where it is still in very high esteem. There it is frequently employed against common intermittent fevers, in preference to the Peruvian bark, as being less subject to produce some inconveniences, which the latter

on

on account of its great astringency is apt to occasion. It is also said to have been employed with great success in some very dangerous epidemic fevers attended with petechiæ; and it is frequently employed with advantage in flatulent colics, internal hæmorrhages, dysenteries, diarrhœas, and similar disorders. In Britain it has been used by some practitioners, particularly by the late Dr Keir of London, who thinks that it is by no means so generally employed as it deserves to be.

Its virtues are partially extracted by water, and totally by rectified spirit; but it is most effectual when given in substance.

CASSIA FISTULARIS

[*Lond. Ed.*] *Frustr.*

Cassia fistula Lin.

Cassia; the fruit.

This is the fruit of an oriental tree, and is a cylindrical pod, about an inch in diameter, and a foot or more long: the outside of it is a hard brown bark: the inside is divided by thin transverse woody plates, covered with a soft black pulp of a sweetish taste, with some degree of acrimony. There are two sorts of this drug in the shops; one brought from the East Indies, the other from the West: the canes or pods of the latter are generally large, rough, thick-rinded, and the pulp nauseous; those of the former are less, smoother, the pulp blacker, and of a sweeter taste; this sort is preferred to the other. Such pods should be chosen as are weighty, new, and do not make a rattling noise (from the seeds being loose within them) when shaken. The pulp should be of a bright shining black colour, and of a sweet taste, not harsh, which

happens from the fruit being gathered before it has grown fully ripe; nor sourish, which it is apt to turn upon keeping: it should neither be very dry nor very moist, nor at all mouldy; which, from its being kept in damp cellars, or moistened in order to increase its weight, it is very subject to be. Greatest part of the pulp dissolves both in water and in rectified spirit; and may be extracted from the cane by either. The shops employ water, boiling the bruised pod therein, and afterwards evaporating the solution to a due consistence.

The pulp of cassia is a gentle laxative, and is frequently given, in a dose of some drachms, in colic habits. Some direct a dose of two ounces or more as a cathartic, in inflammatory cases, where the more acid purgatives have no place: but in these large quantities it generally nauseates the stomach, produces flatulencies, and sometimes gripings, especially if the cassia be not of a very good kind: these effects may be prevented by the addition of aromatics, and exhibiting it in a liquid form. Geoffroy says, it does excellent service in the painful tension of the belly, which sometimes follows the imprudent use of antimonials, and that it may be advantageously acuated with the more acid purgatives, or antimonial emetics, or employed to abate their force. Vallisneri relates, that the purgative virtue of this medicine is remarkably promoted by manna: that a mixture of four drachms of cassia and two of manna, purges as much as twelve drachms of cassia or thirty-two of manna alone. Sennertus observes, that the urine is apt to be turned of a green colour by the use of cassia: and sometimes, where

where a large quantity has been taken, blackish. This drug gives name to an official eleſtuary, and is an ingredient alſo in another.

CASSIA LIGNEA [Ed.]

Cortex, flores nondum explicati.

Laurus Cassia Lin.

Cassia; the bark and buds.

This bark, which is imported from different parts of the East Indies and from China, has a very exact resemblance to the cinnamon, and is obtained from a species of the same genus of tree. It is distinguishable from the cinnamon, by being of a thicker and coarser appearance, and by its breaking short and smooth, while the cinnamon breaks fibrous and shivery.

This bark resembles cinnamon still more exactly in its aromatic flavour than in its external appearance, and seems only to differ from it in being somewhat weaker, in abounding more with a viscous mucilaginous matter, and in being less astringent. Accordingly, it has not only a place in the Edinburgh pharmacopœia, but is also the basis of a distilled water. It is perhaps surprising that the London college have not given it a place in their list. But although it does not enter their pharmacopœia, yet we may venture to assert that it will not be neglected by the apothecaries. At present it is very common with many of them to substitute the cassia in every case for the more expensive article cinnamon: and indeed almost the whole of what is at present sold under the title either of simple or spirituous cinnamon-water, is entirely prepared from cassia, and not even entirely from the bark, but from a mixture of the bark and buds.

CASTOREUM [Lond. Ed.]

Castor fiber Lin.

Castor.

Castor appears to be a peculiar fatty deposition, found in cells or bags situated near the rectum in the beaver, a four-footed amphibious animal frequent in several parts of Europe and America. The best comes from Russia: this is in large round hard pods, which appear, when cut, full of a brittle red liver-coloured substance, interspersed with membranes and fibres exquisitely interwoven. An inferior sort is brought from Dantzick; this is generally fat and moist. The worst of all is that of New England, which is in longish thin pods. But of late some, apparently not inferior to the Russian castor, has been brought from Hudson's bay.

Castor has a strong disagreeable smell, and an acrid, biting, bitterish, nauseous taste. Water extracts the nauseous part, with little of the finer bitter; rectified spirit extracts this last, without much of the nauseous: proof-spirit both: water elevates the whole of its flavour in distillation: rectified spirit brings over nothing.

Castor is considered as one of the capital nerve and antihysteric medicines: some celebrated practitioners have nevertheless doubted its virtues; Newmann and Stahl declare it insignificant. Experience, however, has shewn that the virtues of castor are considerable, though they are certainly far less than they have been generally supposed to be. Its official preparations are a simple and compound spirituous tincture. It is an ingredient in some other compositions, as the compound powder of myrrh.

CASUM.

CASUMUNAR [*Brun.*]

This is a tuberous root, an inch or more thick, marked on the surface with circles or joints like galingal, of a brownish or ash colour on the outside, and a dusky yellowish within; it is brought from the East Indies, cut into transverse slices: what kind of plant it produces is not known.

Cassumunar has a warm bitterish taste, and an aromatic smell, somewhat resembling that of ginger. It has been celebrated in hysterical cases, epilepsies, palsies, loss of memory, and other disorders; the present practice sometimes employs it as a stomachic and a carminative, but it is not so much used or known as it deserves to be.

CATECHU, *Vulgo*, *Terra Japonica* [*Lond. Ed.*]
Mimosa Catechu Lin.

Catechu; the extract.

This vegetable extract, which has long had, but very improperly, the name of *Terra Japonica*, is the product of a plant growing in the East Indies. A particular account of the vegetables from whence it is obtained, as well as the method of preparation, was some time ago published by Dr Keir in the London Medical Observations. The only earth which it contains, consists entirely of adhering impurities from the furnaces or kilns in which it is prepared. Hence it is with great propriety, that in some of the best foreign pharmacopœias, a *succus japonicus depuratus* is introduced, although not adopted either by the London or Edinburgh colleges.

The extract of catechu in its purest state is a dry and pulverisable substance. Outwardly it is of a reddish colour, internally of a shining dark brown, with a slight cast of red. It is a mild, but at the

same time a powerful astringent. It is more agreeable in taste than most other substances of that class. It leaves in the mouth a kind of sweetness and mucilaginous sed. It may be usefully employed for most purposes where an astringent is indicated, provided the most powerful be not requisite. But it is particularly useful in alvine fluxes; and where these require the use of astringents, we are acquainted with no one equally beneficial. Besides this it is employed also in uterine profusiva, in laxity and debility of the viscera in general, in catarrhal affections, and various other diseases where astringents are indicated. It is often suffered to dissolve leisurely in the mouth, as a topical astringent for laxities and exulcerations of the gums, for apthous ulcers in the mouth, and similar affections: And it is in some other cases applied externally both under the form of solution and of ointment.

Catechu dissolves almost entirely in water excepting its impurities. But these are in general so considerable in point of quantity, that Dr Lewis computes them to constitute one eighth part of the mass. Of the pure matter, rectified spirit dissolves about seven eighths into a deep red liquor; the part which it leaves undissolved is an almost insipid mucilaginous substance.

Catechu is the basis of several fixed formulæ in our pharmacopœias, particularly of a tincture and an electuary: But the best form under which it can be exhibited is that of simple infusion in warm water, with a proportion of cinnamon or cassia; for by this means it is at once freed from its impurities, and improved by the addition of the aromatic.

CEN.

CENTAURIUM MAJOR

*Radix.**Centaurea Centaureum* Lin.

Greater centaurry, the root.

The greater centaurry is a large plant cultivated in gardens. The root has a rough somewhat acrid taste, and abounds with a red viscid juice; its rough taste has gained it some esteem as an astringent; and its acrimony as an aperient; and its glutinous quality as a vulnerary: the present practice takes little notice of it with any intention.

CENTAURIUM MINUS

*[Lond. Ed.] Cacumen.**Gentiana Centaureum* Lin.

Lesser centaurry; the top.

This grows wild in many parts of England, in dry pasture grounds, and among corn. The tops are an useful aperient bitter.

CEPA *[Succ.] Radix.**Allium cepa* Lin.

Onion; the root.

These roots are considered rather as articles of food than of medicine: they are supposed to afford little or no nourishment, and when eaten liberally produce flatulencies, occasion thirst, head-achs, and turbulent dreams: in cold phlegmatic habits, where a viscid mucus abounds, they doubtless have their use; as by their stimulating quality they tend to excite appetite and promote sweat: by some they are strongly recommended in suppression of urine, and in dropsies. The chief medicinal use of onions in the present practice is in external applications, as a cataplasm for suppurating tumours, &c.

CERA FLAVA *[Lond. Ed.]*

Yellow bees wax.

This is a solid concrete obtained from the honeycombs after the

honey is got out by heating and pressing them between iron plates. The best sort is of a lively yellow colour, and an agreeable smell, somewhat like that of honey; when new, it is toughish, yet easy to break; by age it becomes harder and more brittle, it loses its fine colour, and in great measure its smell.

CERA ALBA *[Lond. Ed.]*

White wax.

White wax is prepared from the yellow, by reducing it into thin flakes, and exposing it for a length of time to the action of the sun, air, and water; when sufficiently bleached, it is melted and cast into cakes. The best sort is of a clear and almost transparent whiteness, and of a light agreeable smell, like that of the yellow wax, but much weaker.

The chief medical use of wax is in cerates, plasters, unguents, &c. as an emollient for promoting suppuration, &c. It readily unites with oils and animal fats, but not with watery or spirituous liquors. It is given also internally in diarrhoeas and dysenteries, when mixed with oily substances.

CERASUS *[Succ.] Folia,**fructus, gummi.**Prunus Cerasus* Lin.

The cherry; the leaves, fruit, and gum.

Of this fruit a considerable number of varieties are cultivated in our gardens: particularly the sweet cherry with a black juice; the pleasantly-fourish cherry, with a colourless juice; and the very same cherry with a blood-red juice; commonly called black, red, and morello cherries.

These fruits, especially the acid sorts, are very useful and agreeable coolers, and quenchers of thirst; and

and are sometimes directed with this intention, in bilious, or febrile distempers. Boerhaave was extremely fond of these and the other fruits, called *heræi*, as aperients in some chronic cases; and declares himself persuaded, that there is no kind of obstruction of the viscera capable of being removed by medicine, which will not yield to the continued use of these. They are rather, however, used as an article of diet or luxury, than in the way of medicine; and accordingly have no place in the London or Edinburgh pharmacopœias.

The gum of the cherry is a pretty pure vegetable mucilage, nearly the same with gum arabic.

CEREFOLIUM [Succ.] *Herba.*

Sandix Cerefolium Lin.

Chervil; the plant.

This is a low annual plant commonly cultivated in gardens for culinary purposes. It is grateful both to the palate and stomach, gently aperient and diuretic. Geoffroy assures us, that he has found it from experience to be of excellent service in dropsies; that, in this disorder, it promotes the discharge of urine when suppressed; renders it clear when feculent and turbid; and when high and fiery, of a paler colour; that it acts mildly without irritation, and tends rather to allay than to excite inflammation. He goes so far as to say, that dropsies which do not yield to this medicine, are scarcely capable of being cured by any other. He directs the juice to be given in the dose of three or four ounces every fourth hour, and continued for some time, either alone, or in conjunction with nitre and syrup of the five opening roots.

CERVUS CORNU [Lond.]

Stag's or Hart's horn.

Many extraordinary virtues have been attributed to these horns, and to all the parts of the animal in general: but experience gives no countenance to them; nor do they seem to have any other foundation than the great timidity of the hart, the annual renewal of his horns, and an opinion of his extraordinary longevity. From these circumstances it was inferred that all the parts of him must be proper for intimidating the enraged Archæus, renewing health and strength, and prolonging life. They are of the same nature with bones; and their products by heat are those of the solid animal substances in general. As such they were at one time so much employed for yielding the volatile alkali, that they even gave a name to that article.

The horns boiled in water, give out an emollient nutritious jelly. Burnt to whiteness, they yield an earth, which is employed in the officinal white decoction, or, as it is now more properly styled, the *Decoctum cornu cervi*.

CHALYBS, See **FERRUM**.

CHAMÆDRYS [Succ.] *Herba.*

Teucrium chamædris Lin.

Germander; the herb.

This is a low shrubby plant, cultivated in gardens. The leaves, tops, and seeds, have a bitter taste, with some degree of astringency and aromatic flavour. They are recommended as sudorific, diuretic, and emmenagogue, and for strengthening the stomach and viscera in general. With some they have been in great esteem in intermittent fevers, and also in scrophulous and other chronic disorders; but at the

the present they are very little used, and have now no place either in the London or Edinburgh pharmacopœias.

CHAMÆMELUM [Lond.]

Fla simplex. [Ed.] *Herba et Flores.*

Anthemis nobilis Lin.

Chamomile; the herb and flowers.

These have a strong not ungrateful aromatic smell, and a very bitter nauseous taste. They are accounted carminative, aperient, emollient, and in some degree anodyne; and stand recommended in flatulent colics, for promoting the uterine purgations, in spasmodic pains, and the pains of women in child bed: sometimes they have been employed in intermittent fevers, and in nephritis. These flowers are frequently also used externally in discutient and antiseptic fomentations, and in emollient glysters: they enter the *Decoctum pro emenate* and *Decoctum pro somento* of the London, and the *Decoctum chamemeli* of the Edinburgh pharmacopœia. An essential oil was formerly directed to be prepared from them, but it is now omitted. A simple watery infusion of them taken in a tepid state is at present frequently employed to promote the operation of emetics.

CAMÆPITHYS [Succ.] *Herba.*

Teucrium Chamæpithys Lin.

Ground pine, the herb.

This is a low hairy plant, clammy to the touch, of a strong aromatic resinous smell, and a bitter roughish taste. It is recommended as an aperient and vulnerary, and also in gouty and rheumatic pains.

CHELIDONIUM MAJUS [Brun.] *Herba, Radix.*

Chelidonium majus Lin.

Celandine; the leaves and root.

This plant grows upon old walls, among rubbish, and in waste shady places. The herb is of a bluish green colour; the root of a deep red; both contain a yellowish gold-coloured juice; their smell is disagreeable; the taste somewhat bitterish, very acrid, biting and burning the mouth; the root is the most acrid. The juice of celandine has long been celebrated in disorders of the eyes: but it is too sharp, unless well diluted, to be applied with safety to that tender organ. It has been sometimes used, and it is said with good success, for extirpating warts, cleansing old ulcers, and in cataplasms for the herpes miliaris. This acrimonious plant is rarely given internally; the virtues attributed to it are those of a stimulating aperient, diuretic, and sudorific: it is particularly recommended in jaundices where there are no symptoms of inflammation, and in dropsies. Some suppose the root to have been Helmont's specific in the hydrops ascites. Half a drachm or a drachm of the dry root is directed for a dose; or an infusion of an ounce of the fresh root in wine.

CHELIDONIUM MINUS [Brun.] *Radix.*

Ranunculus Ficaria Lin.

Wilewort; the root.

This is a very small plant, found in moist meadows, and by hedgesides: the roots consist of slender fibres, with some little tubercles among them, which are supposed to resemble the hæmorrhoids; hence it has been concluded, that this root must needs be of wonderful efficacy for the cure of that disease: to the taste, it is little other

other than mucilaginous; and although still retained in several of the foreign pharmacopœias, it is never used in this country.

CHINA [Succ.] Radix.

Smilax China Lin.

China root.

This root is brought from the East Indies. But besides the oriental china root, there is also a root under the same name brought from the West Indies, obtained from a different species of the same genus. They are both longish, full of joints, of a pale reddish colour, of no smell, and very little taste: the oriental, which is the most esteemed, is considerably harder, and paler coloured than the other. Such should be chosen as is fresh, close, heavy, and upon being chewed appears full of a fat unctuous juice. China root was either unknown or disregarded by the ancient physicians. It was first introduced into Europe about the year 1535, with the character of being a specific against venereal and cutaneous disorders; and as such was used for some time, but at length gave place to medicines of a more powerful kind. It is generally supposed to promote insensible perspiration and the urinary discharge.

CICHOIREUM [Succ.] Radix, herba.

Cichoreum Intybus Lin.

Wild fucory; the roots and herb.

The root has a moderately bitter taste, with some degree of roughness; the leaves are somewhat less bitter: the roots, stalks, and leaves yield, on being wounded, a milky saponaceous juice. By culture this plant loses its green colour and its bitterness, and in-

this state is employed in salads; the darker coloured and more deeply jagged the leaves, the bitter is their taste. Wild fucory acts without much irritation, tending to cool the body, and at the same time corroborate the tone of the intestines. The juice taken in large quantities, so as to keep up a gentle diarrhœa, and continued for some weeks, has been found to produce excellent effects in cutaneous affections and other chronic diseases.

CICUTA [Lond.] Herba, folia, semen. [Edin.] Folia, semen.

Conium maculatum Lin.

Hemlock; the leaves, flower, and seed.

This is a large umbelliferous plant, common about the sides of fields, under hedges, and in moist shady places: the leaves are winged, divided into a great number of small fern-like sections, of a dark or blackish green colour, and appearing as it were rough: the stalk is hollow (as is likewise great part of the root after the stalk has arisen), and spotted with several blackish, red, or purple spots. Hemlock is sometimes applied externally in the form of decoction, infusion, or poultice, as a discutient. These are apt to excoriate, and their vapour is sometimes particularly disagreeable and hurtful. The stalks are insignificant, and the roots very virulent. With regard to its virtue, when taken internally, it has been generally accounted poisonous; which it doubtless is, in a high degree, when used in any considerable quantity. But Dr Stuerk has found, that in certain small doses, it may be taken with great safety; and that, without at all disordering the constitution, or even producing

ducing any sensible operation, it sometimes proves a powerful solvent in many obstinate disorders. In scirrhus, the internal and external use of hemlock has been found useful, but then mercury has been generally used at the same time. In open cancer, it often abates the pains, and is freed from the conflagrating effects of opium. It is likewise used in scrophulous tumours and ulcers, and other ill conditioned sores. It is also recommended by some in chincough, and various other diseases. Its common, and perhaps best form, is that of the powdered leaves, in the dose, at first, of two or three grains a-day, which in some cases has been gradually increased to upwards of two ounces a-day, without producing giddiness. Both the London and Edinburgh colleges have given a place to the *Succus spissatus cicute*.

CINARA [Lond Ed.] *Folium*.

Cynara Scolymus Lin.

Artichoke; the leaves.

The artichoke is a large rough plant, with greyish leaves, which is well known in our gardens, being very commonly cultivated for culinary purposes. The leaves are bitter; and on being pressed give out their bitterness along with their juice. This expressed juice is given in dropies, and in some instances has proved successful after other medicines have failed. For this purpose, the expressed juice passed only through a coarse strainer, is mixed with an equal quantity of white wine, and of this mixture two or three table spoonfuls are taken every morning and evening. It operates by promoting diuresis. For this purpose, an infusion of the leaf is also used; and both the leaves and stalks enter into many

of the diuretic decoctions used by the country people.

CINNABARIS NATIVA [Brun.]

Native cinnabar.

This is a ponderous mineral of a red colour, found in Spain, Hungary, and several other parts of the world. The finest sort is in pretty large masses, both externally and internally of an elegant deep red colour; which is much improved by grinding the mass into fine powder; There is another sort, of a good colour, in roundish drops, smooth without, and striated within.

This mineral is generally composed of 6 parts of mercury and one of sulphur; the finer the colour of the cinnabar, the more mercury it is found to hold. Native cinnabar has been by many preferred as a medicine to that made by art: The native has sometimes been observed to occasion nausea, vomiting, and anxiety: these probably proceeded from an admixture of some arsenical particles which it could not be freed from by repeated ablution. When pure, it has no quality or medical virtue distinct from those of the artificial cinnabar, now styled, *Hydragyrus sulphuratus ruber*, and afterwards to be mentioned among the mercurial preparations.

CINCHONA [Lond.] *Cortex*, CORTEX PERUVIANUS [Edin.]

Cinchona officinalis Lin.

Peruvian bark.

The tree which furnishes this bark is described as being in general about fifteen feet high and six inches thick. It somewhat resembles our cherry-tree, grows promiscuously in forests, particularly

larly in the hilly parts of Quito in Peru, and is spontaneously propagated from its seeds.

The bark has some odour, to most people not unpleasant, and very perceptible in the distilled water, in which floating globules, like essential oil, have been observed. Its taste is bitter and astringent, accompanied with a degree of pungency, and leaving a considerably lasting impression on the tongue.

Two species are mentioned, viz. the coloured and the white. The coloured includes the pale, the red, the yellow, and the knotty; their barks being coloured. The white includes four varieties, their barks being of a whitish colour.

The proper red bark and one of the white kind have been found in the province of Santa Fé.

A species of cinchona has also been discovered in the West India islands, particularly in Jamaica: It is accurately described by Dr Wright, under the title of *Cinchona Jamaicensis*, in a paper published in the Philosophical Transactions. In Jamaica it is called the sea-side beech, and grows from twenty to forty feet high. The white, furrowed, thick outer bark is not used; the dark-brown inner bark has the common flavour, with a mixed kind of taste, at first of horse-radish and ginger, becoming at last bitter and astringent. It seems to give out more extractive matter than the cinchona officinalis. Some of it was imported from St Lucia, in consequence of its having been used with advantage in the army and navy during the last war. The fresh bark is found to be considerably emetic and cathartic, which

properties it is said to lose on drying.

The pale and the red are chiefly in use in Britain. The pale is brought to us in pieces of different sizes, either flat or quilled, and the powder is rather of a lighter colour than that of cinnamon. The red is generally in much larger, thicker, flatter pieces, but sometimes also in the form of quills, and its powder is reddish like that of Armenian bole. It is much more resinous, and possesses the sensible qualities of the cinchona in a much higher degree than the other sorts; and the more nearly the other kinds resemble the red bark, the better they are now considered. The red bark is heavy, firm, sound, and dry; friable between the teeth; does not separate into fibres; and breaks, not shivery, but short, close, and smooth. It has three layers: the outer is thin, rugged, of a reddish brown colour, but frequently covered with mossy matter: the middle is thicker, more compact, darker-coloured, very resinous, brittle, and yields first to the pestle: the innermost is more woody, fibrous, and of a brighter red.

The Peruvian bark yields its virtues both to cold and boiling water; but the decoction is thicker, gives out its taste more readily, and forms an ink with a chalybeate more suddenly than the fresh cold infusion. This infusion, however, contains at least as much extractive matter, but more in a state of solution; and its colour on standing some time with the chalybeate, becomes darker; while that of the decoction becomes more faint. When infusions are of a certain age, the addition

addition of a chalybeate renders them green; and when this is the case, they are found to be in a state of fermentation, and spoil. Mild or caustic alkalies, or lime, precipitate the extractive matter, which, in the case of the caustic alkali, is redissolved by a farther addition of the alkali. Lime water precipitates less from a fresh infusion than from a fresh decoction; and in the precipitate of this last some mild earth is perceptible. The infusion is reduced by age to the same state with the fresh decoction, and then they deposit nearly an equal quantity of mild earth and extractive matter; so that lime-water, as well as a chalybeate, may be used as a test of the relative strength and perishable nature of the different preparations, and of different barks. Accordingly cold infusions are found by experiments to be less perishable than decoctions; infusions and decoctions of the red bark, than those of the pale; those of the red bark however, are found by length of time to separate more mild earth with the lime water, and more extractive matter. Lime-water, as precipitating the extractive matter, appears an equally improper and disagreeable menstruum.

Water is found to suspend the resin by means of much less gum than has been supposed. Rectified spirit of wine extracts a bitterness, but no astringency, from a residuum of twenty affusions of cold water; and water extracts astringency, but no bitterness, from the residuum of as many affusions of rectified spirit. The residua in both are insipid.

From many ingenious experiments made on the Peruvian bark by Dr Irving, which are now

published in a dissertation that gained the prize-medal given by the Harveian society of Edinburgh for 1783, the power of different menstrua on the Peruvian bark, is ascertained with greater accuracy than had before been done: and it appears, that with respect to their comparative power, the fluids after mentioned act in the order in which they are placed.

Dulcified spirit of vitriol.

Caustic ley.

French brandy,

Rhenish wine.

Soft water.

Vinegar and water.

Dulcified spirit of nitre.

Mild volatile alkali.

Rectified spirit of wine.

Mild vegetable alkali.

Lime water.

The antiseptic powers of vinegar and bark united are double the sum of those taken separately. The astrigent power of the bark is increased by vitriolic acid; the bitter taste is destroyed by it.

The official preparations of the bark are,

1. The powder: of this, the first parcel that passes the sieve being the most refinous and brittle part, is the strongest.

2. The extract: the watery and spirituous extracts conjoined form the most proper preparations of this kind.

3. The resin: this cannot perhaps be obtained separate from the gummy part, nor would it be desirable.

4. Spirituous tincture: this is best made with proof spirit.

5. The decoction: this preparation, though frequently employed, is yet in many respects inferior even to a simple watery infusion.

The best form is that of powder;

der; in which the constituent parts are in the most effectual proportion. The cold infusion which can be made in a few minutes by agitation, the spirituous tincture, and the extract, are likewise proper in this respect. For covering the taste, different patients require different vehicles; liquorice, aromatics, acids, port-wine, small-beer, porter, milk, butter-milk, &c. are frequently employed; and those who dislike the taste of the bark itself, vary in their accounts to which the preference is due; or it may be given in form of electuary with currant jelly, or with brandy or rum.

According to some, the Peruvians learned the use of this bark by observing certain animals affected with intermittents instinctively led to it; while others say, that a Peruvian having an ague was cured by happening to drink of a pool into which some trees of cinchona had accidentally fallen; and its use in gangrene is said to have originated from its curing one in an aguish patient. About the year 1640, the lady of the Spanish viceroy, the Comitissa del Cinchon, was cured of an ague by the bark, which has therefore been called Cortex or Pulvis Comitissæ, Cinchona, Chinchina or Chinchina, Kinakina, or Kinkina, Quinaquina or Quina; and from the interest which the Cardinal de Lugo and the Jesuit fathers took in its distribution, it has been called Cortex or Pulvis Cardinalis de Lugo, pulvis Jesuiticus, Patrum, &c.

On its first introduction into Europe, it was reprobated by many eminent physicians; and at different periods long after, it was considered a dangerous remedy; but its character, in process of

time became very universally established.

Practitioners have differed much with regard to the mode of operation of the Peruvian bark. Some have ascribed its virtues entirely to a stimulant power; but while the strongest and most permanent stimuli have by no means the same effect with bark in the cure of diseases, the bark itself shews scarcely any stimulant power; either from its action on the stomach or on other sensible parts to which it is applied. From its action on dead animal fibres, there can be no doubt of its being a powerful astringent; and from its good effects in certain diseases, there is reason to presume that it is a still more powerful tonic. To this tonic power some think that its action as an antiseptic is to be entirely attributed: but that it has a powerful effect in resisting the septic progress to which animal substances are naturally subjected, appears to be independant of tonic power, because it resists putrefaction in dead animal matter when entirely detached from the living body.

Although it be admitted that the Peruvian bark acts powerfully as an astringent, as a tonic, and as an antiseptic, yet these principles will by no means explain all the effects derived from it in the cure of diseases. And accordingly, from no artificial combination in which these powers are combined, or in which they exist even to a higher degree, can the good consequences resulting from Peruvian bark be obtained. Many practitioners therefore, are disposed to view it as a specific. If by a specific we mean an infallible remedy, it cannot indeed be considered as intitled to that appellation; but in as far

as it is a very powerful remedy, of the operation of which no satisfactory account has yet been given, it may with great propriety be denominated a specific.

It was at first introduced, as has already been said, for the cure of intermittent fevers; and in these, when properly exhibited, it rarely fails of success. Practitioners, however, have differed with regard to the best mode of exhibition; some prefer giving it just before the fit, some during the fit, others immediately after it. Some order it in the quantity of an ounce, between the fits; the dose being the larger and more frequent according to the frequency of the fits; and we think this mode of exhibition, although it may perhaps sometimes lead to the employment of more bark than is necessary, preferable, from being best suited to most stomachs. The requisite quantity is very different in different cases: and in many vernal intermittents it seems even scarcely necessary.

It often vomits or purges, and sometimes oppresses the stomach. These, or any other effects that may take place, are to be counteracted by remedies particularly appropriated to them. Thus, vomiting is often restrained by exhibiting it in wine, looseness by combining it with opium; and oppression at the stomach, by the addition of an aromatic. But unless for obviating particular occurrences, it is more successful when exhibited in its simple state than with any addition; and there seems to be little ground for believing that its powers are increased by crude sal ammoniac, or any other additions which have frequently been made.

It is now given, from the very commencement of the disease, with-

out previous evacuations, which with the delay of the bark, or under doses of it, by retarding the cure, often seem to induce abdominal inflammation, scirrhous, jaundice, hectic, dropsy, &c. symptoms formerly imputed to the premature or intemperate use of the bark, but which are best obviated by its early and large use. Its use is to be continued not only till the paroxysms cease, but till the appetite, strength, and complexion return. Its use is then gradually to be left off, and repeated at proper intervals to secure against a relapse, to which, however unaccountable, independently of the recovery of vigour, there often seems to be a peculiar disposition; and especially when the wind blows from the east. Although, however, most evacuations conjoined with the Peruvian bark in intermittents are rather prejudicial than otherwise, yet it is of advantage, previous to its use, to empty the stomach; and on this account good effects are often obtained from premising an emetic.

It is a medicine which seems not only suited both to formed and latent intermittents, but to that state of fibre on which all rigidly periodical diseases seem to depend; as periodical pain, inflammation, hæmorrhagy, spasm, cough, loss of external sense, &c.

Bark is now used by some in all continued fevers; at the same time attention is paid to keep the bowels clean, and to promote when necessary the evacuation of redundant bile; always, however, so as to weaken the patient as little as possible.

In confluent small pox, it promotes languid eruption and suppuration, diminishes the fever thro' the whole course of it, and prevents

vents or corrects putrefescence and gangrene.

In gangrenous sore throats it is much used, as it is externally and internally in every species of gangrene.

In contagious dysentery, after due evacuation, it has been used taken internally and by injection, with and without opium.

In all these hæmorrhagies called passive, and which it is allowed all hæmorrhagies are very apt to become, and likewise in other increased discharges, it is much used; and in certain undefined cases of hæmoptysis, some allege that it is remarkably effectual when joined with an absorbent.

It is used for obviating the disposition to nervous and convulsive diseases; and some have great confidence in it joined with the acid of vitriol, in cases of phthisis, serophula, ill-conditioned ulcers, rickets, scurvy, and in states of convalescence.

In these cases, notwithstanding the use of the acid, it is proper to conjoin it with a milk diet.

In dropsy not depending on any particular local affection, it is often alternated or conjoined with diuretics, or other evacuants: and by its early exhibition after the water is once drawn off, or even begins to be freely discharged, a fresh accumulation is prevented, and a radical cure obtained. In obstinate venereal cases, particularly those which appear under the form of bark in the bones, the Peruvian bark is often successfully subjoined to mercury, or even given in conjunction with it.

CINERES CLAVELLATI

[*Lond.*] *Kali impurum.*

LIXIVA [*Edin.*] *Alkali fixum vegetabile.*

Potash, Pearl-ash, Lixive.

Potash is an impure alkaline salt, produced from most land plants by burning them with a close smothering heat. In this state they are called weed-ashes, which contain besides alkali, some charcoal, sulphur, and a little vitriolated tartar. These foreign matters are partly separated, by mixing the ashes with water, and passing it through a vessel with holes at the bottom covered with straw. It is then evaporated to the consistence of honey, and afterwards burnt in an oven, from which it acquires a little stony matter. In this state, from its colour, it is called pearl ashes. If quick lime be mixed with the ashes, and passed through the vessel as before, the alkali is considerably deprived of its fixed air, is consequently caustic, has a darker colour, and gives a redish solution, having dissolved some of the iron of the pot it is prepared in, and from which it is called potash. Large quantities of it are brought to us from America, Russia, and other places. Other kinds of impure vegetable alkali appear in commerce, under the names of calshub, marcott ashes, &c.

CINNAMOMUM [*Lond. Ed.*]

Cortex et ejus oleum essentielle.

Laurus Cinnamomum Lin.

Cinnamon; the bark and its essential oil.

This is a light thin bark, of a reddish colour, rolled up in long quills or canes; of a fragrant delightful smell, and an aromatic, sweet, pungent taste, with some degree of astringency. It is generally mixed with the cassia bark: this last is easily distinguishable by its breaking smooth, while cinnamon splinters; and by its slimy mucilaginous taste, without the roughness

roughness of the true cinnamon. Cinnamon is a very elegant and useful aromatic, more grateful both to the palate and stomach, than most other substances of this class: by its astringent quality it likewise corroborates the viscera, and proves of great service in several kinds of alvine fluxes, and immoderate discharges from the uterus. An essential oil, a distilled water, a distilled spirit, and a tincture of it, are directed to be kept in the shops; but these are much more frequently prepared from cassia than from cinnamon; and in those formulæ, in which distillation is employed, the difference is perhaps not very material: but whether it be exhibited under the form of powder or infusion, astringency is only to be looked for from the genuine cinnamon; and this is often required where it is employed as a spicy ingredient in a great number of compositions.

CITRUS [*Succ.*] *Coritici flavedo, oleum, succus.*

Citrus medica Lin.

Citron; the yellow rind, oil, and juice.

The citron is an evergreen tree, or shrub, and is only a variety of the Lemon tree: it was first brought from Assyria and Media, (whence the fruit is called *mala Assyria, mala Medica*) into Greece, and thence into the southern parts of Europe, where it is now cultivated; they grow also in our West India islands. Citrons are rarely used among us: they are of the same quality with lemons, except that their juice is somewhat less acid. They enter, however, a considerable number of formulæ in several of the foreign pharmacopœias, and

with us are frequently employed as a condiment.

COCCINELLA [*Lond. Ed.*]

Coccus cacti Lin.

Cochineal.

This is a small, irregular, roundish body, of a dark red colour on the outside, and a deep bright red within: it is brought from Mexico and New Spain. This substance was long supposed to be the seed of a plant; but it is an insect of the Coccus kind, which breeds on the American prickly pear tree, and adheres to the plant without changing its place. Cochineal has been strongly recommended as a sudorific, cardiac, and alexipharmic; but practitioners have never observed any considerable effects from it. Its greatest consumption is among the scarlet dyers; and in medicine its principal use is a colouring drug: both watery and spirituous liquors extract its colour. In the London and Edinburgh pharmacopœias, some of the tinctures receive from this drug a fine red colour.

COCHLEARIA HORTENSIS

[*Lond. Ed.*] *Folia.*

Cochlearia officinalis Lin.

Garden scurvy-grass; the leaves.

COCHLEARIA MARINA.

Folia.

Cochlearia anglica Lin.

Sea scurvy-grass; the leaves.

These plants have little other difference than that expressed in their titles; in taste and medical virtue, the first is considerably the strongest; and hence is alone retained both by the London and Edinburgh colleges.

Scurvy-grass is a pungent stimulanting medicine; capable of promoting

moting the fluid secretions; it is particularly celebrated in scurvy, and is the principal herb employed in these kinds of disorders in the northern countries.

COFFEA [Brun.] Semen.

Coffea arabica Lin.

Coffee; the fruit.

Coffee is the fruit of an oriental shrub, now cultivated in the West Indies. This fruit is employed rather as food than as a medicine. The medical effects expected from it are to assist digestion, promote the natural secretions, and prevent or remove a disposition to sleepiness. It has been recommended in spasmodic asthma; and in some cases it is found highly useful in alleviating severe headache.

COLCHICUM [Lond. Ed.]

Radix.

Colchicum autumnale Lin

Meadow saffron; the root.

This plant grows wild in meadows, in the more temperate parts of Europe. The roots, freed from the outer blackish coat and small fibres, are white and full of a white juice. In drying they become wrinkled and dark-coloured. Applied to the skin, this root shews some kind of acrimony. When taken internally, it is said to excite a sense of burning heat, bloody stools, and other violent symptoms. In the form of syrup, however, it has been given to the extent of two ounces a-day without any bad consequence. It is sometimes employed as a diuretic in dropsy.

From its great activity it was long ranked among the poisonous vegetables; but from this circumstance it claimed the attention of Dr Stoerk of Vienna, who made it the subject of many experiments. According to his account, the re-

cent root taken in substance, even to a very small extent, produces alarming effects; but he found that an oxymel prepared from it might be used with safety, and proved a powerful diuretic. Since his publication it has been used by other practitioners; but it has by no means supported the character which he gave of it, even when employed in much larger doses than Dr Stoerk seems to have exhibited. On some occasions, however, it operates as a powerful diuretic; and accordingly it is not only introduced into most of the modern pharmacopœias, but is also the basis of different formulae. The London college, in imitation of the original prescription of Dr Stoerk, have introduced into their pharmacopœia an *oxymel colchici*; but the Edinburgh college, from an objection to honey, which, with some people, is apt to excite violent colic pains, have substituted a *syrupus colchici*; in which, however, nearly the same proportions are retained, sugar being merely employed in place of honey. This syrup, in place of two or three drachms merely, has been given to the extent of two or three ounces in a day, in general without any inconvenience, and sometimes with good effects: but like the other diuretics, it cannot be depended on.

COLOCYNTHIS [Lond]

Fructus medullula [Ed.] *Fructus cortice seminibusque obiectis.*

Cucumis Colocynthis Lin.

Colloquintida, or bitter apple; the medullary part of the fruit.

This is the produce of a plant of the gourd kind, growing in Turkey. The fruit is about the size of an orange; its medullary part, freed from the rind and seeds,

seeds, is alone used in medicine: this is very light white, spongy, composed of membranaceous leaves; of an extremely bitter, nauseous, acrimonious taste. Colocynth is one of the most powerful and most violent cathartics. Many eminent physicians condemn it as dangerous, and even deleterious: others recommend it not only as an efficacious purgative, but likewise as an alterative in obdurate chronic disorders; in the dose of a few grains, it acts with great vehemence, disorders the body, and sometimes occasions a discharge of blood. Many attempts have been made to correct its virulence by the addition of acids, astringents, and the like; these may lessen the force of the colocynth, but no otherwise than might be equally done by a reduction of the dose. The best method of abating its virulence, without diminishing its purgative virtue, seems to be by triturating it with gummy farinaceous substances, or the oily seeds, which, without making any alteration in the colocynth itself, prevent its resinous particles from cohering, and sticking upon the intestines, so as to irritate, inflame, or corrode them. It is an ingredient in some of the purgative pills, and the cathartic extracts of the shops, particularly of the *Extractum colocynthidis compositum*, and *Pilule colocynthidis cum aloë*.

COLOMBA [*Lond. Ed.*] *Radicis.*

Colomba; the root.

The botanical characters of the vegetable from whence this root is obtained are not yet ascertained. It is brought from Colombo in Ceylon in the form of knobs, having a rough surface, and consist-

ing of a cortical, woody, and medullary lamina. It has a disagreeably bitter taste, an aromatic flavour; is considerably antiseptic, and particularly effectual in correcting and preventing the putridity of bile. Abroad it is much used in diseases attended with bilious symptoms, particularly in cholera; and is said to be sometimes very effectual in other cases of vomiting. Some consider it as very useful in dyspepsia. Half a drachm of the powder is given repeatedly in the day. Water is not so complete a menstruum as spirits, but to their united action it yields a flavoured extract in very considerable quantity. Its use in medicine has been particularly recommended to the attention of practitioners by Dr Percival of Manchester in his *Experimental Essays*; and it has in general been found to answer expectation: but it is not so regularly imported as to admit of our shops being supplied with it of good quality; and we frequently find it in a very decayed state.

CONSOLIDA [*Suec.*] *Radicis.*

Symphitum officinale Lin.

Comfrey; the root.

This is a rough hairy plant, growing wild by river-sides and in watery places. The roots are large, black on the out-side, white within, full of a viscid glutinous juice, and of no particular taste. They agree in quality with the roots of althæa; with this difference, that mucilage of *consolida* is somewhat stronger bodied. Many ridiculous histories of the consoling virtues of this plant are related by authors. At present it is so little employed in practice in Britain,

Britain, as to have no place in our pharmacopœias.

ers, berries, and leaves, are said to be poisonous.

CONTRAYERVA [Lond.
Ed.] *Radix.*

COPAL [Brun.] *Resina.*
Rhus copallinum Lin.

Dorstenia contrayerva Lin.

Copal.

Contrayerva; the root.

This is a knotty root, an inch or two long, and about half an inch thick of a reddish brown colour externally, and pale within: long, rough, slender fibres shoot out from all sides of it; these are generally loaded with small round knots. This root is of a peculiar kind of aromatic smell and a somewhat astringent, warm, bitterish taste, with a light and sweetish kind of acrimony when long chewed: the fibres have little taste or smell; the tuberos part therefore should be alone chosen. Contrayerva is one of the mildest of those substances called alexipharmics; it is indisputably a good and useful diaphoretic, and may be safely given in much larger doses than the common practice is accustomed to exhibit it in. Its virtues are, extracted both by water and rectified spirit, and do not arise in evaporation with either: the spirituous tincture and extract-taste stronger of the root than the aqueous ones.

Copal, suppos'd by some a mineral substance, appears to be a resin obtained from large trees growing in New Spain. This resin is brought to us in irregular lumps, some of which are transparent, of a yellowish or brown colour, others semitransparent and whitish. It has never come into use as a medicine; and is rarely met with in the shops, but it is introduced into some of the foreign pharmacopœias, and may be considered as an article well-deserving attention.

CORALLINA [Brun]
Corallina officinalis Lin.

Coraline, or sea-moss.

This is a branched cretaceous substance of a white colour: It is the habitation and production of polypi, and grows on rocks, and sometimes on the shells of fishes. It is celebrated as a vermifuge, but on what foundation is very doubtful: to the taste it is entirely insipid, and probably operates only as an absorbent earth.

CONVALLARIA [Ed.] *Ra-*
dix.

CORALLIUM RUBRUM
[Lond.]

Convallaria Polygonatum Lin.

Isis nobilis Lin.

Solomon's seal; the roots.

Red coral.

The root of this common plant contains a sweetish mucilage, and has been used in form of a poultice in inflammations; but whether this or any other is better than the common poultice of bread and milk is doubtful. A decoction of this root in milk has also been mentioned in certain cases of hæmorrhagy. The flow-

This is also a marine production, of the same nature with the foregoing. It cannot reasonably be considered in any other light than as a mere absorbent; as such it enters the official crab-claw powder, and is sometimes in practice directed by itself; but it is so little employed, and of so little activity, that the Edinburgh

burgh college have with propriety rejected it from their list.

CORIANDRUM [Lond. Ed.]

Semen.

Coriandrum sativum Lin.

Coriander; the seed.

Coriander is an umbelliferous plant, differing from all the others of that class in producing spherical seeds. These, when fresh, have a strong disagreeable smell, which improves by drying, and becomes sufficiently grateful; they are recommended as carminative and stomachic. They were formerly an ingredient in the official compound lime-water and electuary of bay berries; but both these formulæ are now rejected.

CORNUCERVI. See CERVUS.

CORTEX PERUVIANUS.

See CINCHONA.

COTULA FÆTIDA

[Brun.] *Folia.*

Anthemis Cotula Lin.

Mayweed, or wild chamomile.

This plant is common among corn, and in waste places. In appearance it resembles some of the garden chamomiles, but is easily distinguishable from them by its strong fetid scent. It is rarely or never used in the present practice.

CRETA [Lond. Ed.]

Chalk.

This is an earth soluble in vinegar and the lighter acids, so as to destroy every sensible mark of their acidity. It is one of the most useful of the absorbents, and is to be considered simply as such: the astringent virtues which some attribute to it have no foundation, unless in so far as the earth is saturated with acid, with which it composes a saline concrete manifestly subastringent. It gives

name to an official mixture, a powder, and a potion, and is an ingredient in the chalk troches. It is employed also for extricating the volatile salt of sal ammoniac.

CROCUS [Lond. Ed.] *Floris stigma.*

Crocus sativus Lin.

Saffron; the stigma.

These stigmata, or fleshy callaments growing at the end of the pistil of the flower, are carefully picked and pressed together into cakes.

There are three sorts of saffron met with in the shops, two of which are brought from abroad, the other is the produce of our own country; this last is much superior to the two former, from which it may be distinguished by its blades being broader. When in perfection it is of a fiery orange red colour, and yields a deep yellow tincture: it should be chosen fresh, not above a year old, in close cakes, neither dry nor yet very moist, tough and firm in tearing, of the same colour within as without, and of a strong, acrid, diffusive smell.

Saffron is a very elegant and useful aromatic; besides the virtues which it has in common with all the bodies of that class, it has been alleged that it remarkably exhilarates, raises the spirits, and is deservedly accounted one of the highest cordials; taken in large doses, it is said to occasion immoderate mirth, involuntary laughter, and the ill effects which follow from the abuse of spirituous liquors. This medicine is said to be particularly serviceable in hysterical depressions, or obstruction of the uterine secretions, where other aromatics, even those of the

the more generous kind, have little effect. Saffron imparts the whole of its virtue and colour to rectified spirit, proof spirit, wine, vinegar, and water: a tincture drawn with vinegar, loses its colour in keeping: the watery and vinous tinctures are apt to grow sour, and then lose their colour also: that made in pure spirits keeps in perfection for many years. Its official preparations are, a spirituous tincture and syrup. It is an ingredient in several compoitions; but of late years, the estimation in which it was held as a medicine has been rather on the decline. Some experiments made by Dr Alexander shew that it is much less powerful than was once imagined; and it was lately given in the Edinburgh Infirmary by Dr Henry Cullen, even to the extent of half an ounce a day, in several hysterical cases, without any sensible effect whatever.

CUBEBA [Lond, Ed.]

Piper Cubeba Lin.

Cubebs.

Cubebs are a fruit brought from the East Indies. This fruit has a great resemblance to pepper. The principal difference distinguishingable by the eye, is that each cubeb is furnished with a long slender stalk whence they are called by some *piper caudatum*. In aromatic warmth and pungency, cubebs are far inferior to pepper. They were formerly an ingredient in mithridate and theriaca; but they do not enter any of the fixed formulæ of our pharmacopœias.

CUCUMIS AGRESTIS [L.]

Fruſcus recens.

Momordica Elaterium Lin.

Wild cucumber: the fruit.

This plant, found wild in foreign countries, is with us cultivated in gardens. Its principal botanical difference from the common cucumber is the smallness of its fruit, which is no bigger than a Spanish olive; when ripe, it bursts on a slight touch, and sheds its seeds with violence, and hence was named by the Greeks *elaterium*. This name is applied likewise to the fecula of the juice of the fruit, the only preparation of the plant used in medicine. The juice, on standing, separates into the fecula, which falls to the bottom, and a watery fluid which swims above. The clear part may be decanted off, and the rest of the liquid drained off, by cotton threads hung over the sides of the vessel acting like syphons. The fecula may be farther dried by the sun, or a slow heat; and in this dry state it has the name of *elaterium*. Elaterium is a strong cathartic, and very often operates also upwards. Two or three grains are accounted in most cases a large dose. Simon Paulli relates some instances of its good effects in dropies, but cautious practitioners ought not to have recourse to it till after milder medicines have proved ineffectual; to which caution we heartily subscribe. Medicines indeed, which act with violence in a small dose, generally require the utmost skill to manage them with any tolerable degree of safety: to which may be added, that the various manners of making these kinds of preparations, as practised by different hands, must needs vary their power. Of late, the elaterium has not been unfrequently employed in obstinate cases of dropy with success; and when exhibited in doses of only half a grain, repeated at short intervals

till its operation commences, it is in general sufficiently moderate in its effects.

CUMINUM [Lond. Ed.] Semen.

Cuminum Cyminum Lin.

Cumin; the seed.

The cumin is an umbelliferous plant, in appearance resembling fennel; but much smaller. The seeds used in Britain are brought chiefly from Sicily and Malta. Cumin seeds have a bitterish warm taste, accompanied with an aromatic flavour not of the most agreeable kind. An essential oil is obtained from them by distillation, in which their activity is concentrated; and they are not unfrequently used externally, giving a name both to a plaster and cataplasm.

CUPRUM [Lond.] *Ærugo Vitriolum ceruleum*. [Ed.] *Cuprum viriolatum*.

Copper.

Copper is one of the metals often used for different purposes in arts; and is found both in Britain, and in most other countries of Europe. It has never been used as a medicine in its proper metallic form; but it is readily acted on by all saline substances, both by acids, alkalies, and neutrals; and it is even corroded by moisture.

Most of these preparations of copper are violently emetic, and therefore very rarely exhibited internally. Some have ventured on a solution of a grain or two of the metal in vegetable acids, and observe that it acts, almost as soon as received into the stomach, so as to be of great use for occasioning poisonous substances that have been swallowed, to be immediately thrown up again. Boerhaave re-

commends a saturated solution of this metal in volatile alkali as a medicine of great service in disorders proceeding from an acid, weak, cold, phlegmatic cause; if three drops of this tincture be taken every morning with a glass of mead, and the dose doubled every day to twenty-four drops, it proves, he says, aperient, attenuating, warming, and diuretic; he assures us, that by this means he cured a confirmed ascites, and that the urine run out as from an open pipe; but at the same time he acknowledges that, in other cases it failed him. He likewise recommends other preparations of copper as of wonderful efficacy in certain kinds of ill habits. weakness of the stomach, &c. but we cannot think the internal use of this metal advisable in ordinary cases which can be combated by other means. Physicians in general seem to be agreed, that it has really a virulent quality; and too many examples are met with, of fatal consequences ensuing from eating food, which had been dressed in copper vessels not well cleaned from the rust which they had contracted by lying in the air.

Great care ought to be taken that acid liquors, or even water, designed for internal use, be not suffered to stand long in vessels made of copper; otherwise they will dissolve so much of this metal as will give them disagreeable qualities. Hence, in distillation of simple waters with copper stills, the last runnings, which are manifestly acid, have frequently proved emetic. It is remarkable, that while weak acid liquors are kept boiling in copper vessels, they do not seem to dissolve any of the metal; but if suffered to remain in them for the same length of time

time without boiling, they become highly impregnated with the copper. Hence the confectioners, by skilful management, prepare the most acid syrups in copper vessels, without giving them any ill taste from the metal. But although copper be thus dangerous, some preparations of it are in certain cases used with great advantage both externally and internally.

The chief preparations of copper are the blue vitriol, verdeggris, and *cuprum ammoniacum*; but the London college have given a place only to the two former. The blue vitriol is recommended by some as an useful emetic, particularly in cases of incipient phthisis with a view of resolving tubercles. It is sometimes employed as an astringent and escharotic; and verdeggris is used in form of ointment in certain ulcerations, in cases of tinea capitis and the like. The *cuprum ammoniacum*, though it has no place in the pharmacopœia of the London college, is a very active and powerful medicine; and has produced a perfect cure in some instances of epilepsy.

CURCUMA [Lond. Ed.] Radix.

Curcuma longa Lin.

Turmeric; the root.

Turmeric is a root brought from the East Indies, where it is used not only in medicine, but for colouring and seasoning food, as rice. It is internally of a deep lively yellow or saffron colour, which it readily imparts to watery liquors. It has an agreeable weak smell, and a bitterish somewhat warm taste. Turmeric is esteemed aperient and emmenagogue, and of singular efficacy in the jaundice. It tinges the urine of a saffron colour.

CURSUTA [Ed.] Radix.

Gentiana purpurea Lin.

Cursuta; the root.

The foreign root fold under this name was introduced into the last edition but one of the Edinburgh pharmacopœia. It is now believed, that what has had the name of cursuta, is the root of the purple gentian: but what is usually sold under that title in our shops cannot, either by its appearance, taste, or other sensible qualities, be distinguished from the common gentian, the root of the *gentiana lutea*, afterwards to be mentioned. And as far as the medical properties of the cursuta have been ascertained, they are precisely the same with those of gentian. See *GENTIANA*.

CYDONIA MALUS [Lond.]

Fruſtus, Semen.

Pyrus Cydonia Lin.

The quince; its fruit and seeds.

Quinces have a very austere acid taste: taken in small quantity, they are supposed to restrain vomiting and alvine fluxes; and more liberally to loosen the belly. The seeds abound with a mucilaginous substance of no particular taste, which they readily impart to watery liquors: an ounce will render three pints of water thick and ropy like the white of an egg. A mucilage of the seeds is kept in the shops.

CYNOGLOSSUS [Brun.] Radix.

Cynoglossus officinalis Lin.

Hound's tongue; the root.

The leaves of this plant are thought to resemble a dog's tongue; whence its name; they are clothed with a whitish down; it grows wild in shady lanes the roots have a rank disagreeable smell, and rough bitterish taste, covered

covered with a glutinous sweetness. The virtues of this root are very doubtful; it is generally supposed to be narcotic, and by some to be virulently so: others declare, that it has no virtue of this kind, and consider it as a mere glutinous astrigent. The present practice takes no notice of it.

CYNOSBATUS [*Lond.*] *Fruit.*

Rosa canina *Lin.*

Dog-rose; the fruit called hips.

This bush grows wild in hedges throughout England. The flowers have a pleasant smell; but so weak, that Parkinson and others have named the plant *Rosa sylvestris inodora*: a water distilled from them smells agreeably. The fruit or hips contain a sourish sweetish pulp; with a rough prickly matter inclosing the seeds, from which the pulp ought to be carefully separated before it be taken internally: the Wirtemberg college observes, that from a neglect of this caution, the pulp of hips sometimes occasions a pruritus and uneasiness about the anus; and the conserve of it has been known to excite violent vomiting. The conserve is the only official preparation of this fruit. As it is not supposed to possess any particular medical virtue, but is merely used to give form to other articles, the Edinburgh college have omitted it.

CYPERUS [*Brun.*] *Radix.*

Cyperus longus *Lin.*

Cyperus; the root.

This is a plant of the grass kind; it is sometimes found wild, in marshy places in England; the roots are generally brought to us from Italy. This root is long, slender, crooked, and full of knots; U

outwardly of a dark brown, or blackish colour, inwardly whitish; of an aromatic smell, and an agreeable warm taste: both the taste and smell are improved by moderate exsiccation. Cyperus is accounted a good stomachic and carminative, but is at present very little regarded.

DACTYLUS [*Brun.*] *Fructus.*

Phoenix dactylifera *Lin.*

The date; the fruit.

Dates are imported into Britain in the state of a half-dried fruit, about the shape of an acorn, but generally larger, consisting of a sweet pulpy part, and a hard stone: the best are brought from Tunis. They were formerly used in pectoral decoctions; and proposed, besides their emollient and incrassating virtue, to have a slight astringency.

DAUCUS CRETICUS

[*Brun.*] *Semen.*

Athamanta cretensis *Lin.*

Candy carrot; the seeds.

This is an umbelliferous plant, growing wild in the Levant and the warmer parts of Europe. The seeds, which are brought from Crete, have a warm biting taste, and an agreeable aromatic smell. They are carminative, and said to be diuretic, but are at present little used.

DAUCUS SYLVESTRIS

[*Lond. Ed.*] *Semen.*

Daucus Carota *Lin.*

Wild carrot; the seed.

This is common in pasture grounds and fallow fields throughout England. The seeds possess the virtues of those of the *daucus creticus*, in an inferior degree; and have often supplied their place in the shops, and been themselves suppli

supplied by the seeds of the garden carrot; these last are in warmth and flavour the weakest of the three.

DENS LEONIS. See TARAXACUM.

DICTAMNUS ALBUS

[*Ed.*] *Radix.*

Dictamnus albus Lin.

White or ballard dittany; the root.

This plant grows wild in the mountainous parts of France, Italy, and Germany. From thence the cortical part of the root, in a dry state, rolled up in little quills, is sometimes brought to us. It is of a white colour, of a weak not very agreeable smell, and of a durable bitter and slightly pungent taste. It has been recommended as an alexipharmic, a tonic, and an anthelmintic; but it is very seldom used, and has no place in the London pharmacopœia.

DICTAMNUS CRETICUS

[*Succ.*] *Folia.*

Origanum Dictamnus Lin.

Dittany of Crete; the leaves.

This is a kind of origanum said to grow plentifully in the island of Candy, in Dalmatia, and in the Morea: it has been found hardy enough to bear the ordinary winters of our own climate. The leaves, which are the only part in use with us, come from Italy. The best sort are well covered over with a thick white down, and now and then intermixed with purplish flowers. In smell and taste, they somewhat resemble lemon thyme: but have more of an aromatic flavour, as well as a greater degree of pungency; when fresh, they yield a considerable

quantity of an excellent essential oil. But they have now no place either in the London or Edinburgh pharmacopœias.

DIGITALIS [*Land. Ed.*]
Herba.

Digitalis purpurea Lin.

Fox glove; the plant.

This grows wild in woods, and on uncultivated heaths; the elegant appearance of its purple flowers (which hang in spikes along one side of the stalk) has gained it a place in some of our gardens. The leaves have been strongly recommended externally, against scrophulous tumours; and likewise internally, in epileptic disorders: what service they may be capable of doing in these cases is not ascertained by accurate experiment. Several examples are mentioned by medical writers of their occasioning violent vomiting, hypercatharsis, and disordering the whole constitution; inasmuch that Boerhaave accounts them poisonous. The taste of them is bitter, and very nauseous.

Digitalis, however, has lately been employed with great success in other diseases. A treatise was published a few years since by Dr Withering, professedly on the subject of its use in medicine, which contains many important and useful observations.

An infusion of two drachms of the leaf in a pint of water, given in half-ounce doses every two hours till it began to puke or purge, is recommended in dropsy, particularly that of the breast. It is said to have produced an evacuation of water so copious and sudden, in ascites, by stool and urine, that the compression of bandages was found necessary. The plentiful use of diluents is ordered during

its operation. This remedy, however, is inadmissible in weakly patients. Besides being given in infusion, it has also been employed in substance. And when taken at bed time to the extent of one, two, or three grains of the dried powder, it often in a short time operates as a very powerful diuretic, without producing any other evacuation. Even this quantity, however, will sometimes excite very severe vomiting, and that too occurring unexpectedly. During its operation it has a very remarkable influence in rendering the pulse slower; and it frequently excites very considerable vertigo, and an affection of vision.

Besides dropsy, the digitalis has of late also been employed in some instances of hæmoptysis, of phthisis, and of mania, with apparent good effects. But its use in these diseases is much less common than in dropsy.

DOLICHOS [Ed.] *Pulse sanguinis rigida.*

Dolichos pruriens Lin.

Cowhage; the rigid down of the pod.

The dolichos is a plant growing in great abundance in warm climates, particularly in the West India islands; and there it is very troublesome to cattle and other domestic animals. For on account of the spiculæ of the seed bag, it excites, when touched, a very uneasy itching. These spiculæ have been long used in South America, in cases of worms; and have of late been frequently employed in Britain. The spiculæ of one pod mixed with syrup or molasses, and taken in the morning fasting, is a dose for an adult.

The worms are said to appear with the second or third dose; and by means of a purge in some cases the stools are said to have consisted almost entirely of worms. Those who have used it molt, particularly Dr Bancroft and Dr Cochrane, affirm that they have never seen any inconvenience resulting from the internal use of it, notwithstanding the great uneasiness it occasions on the slightest touch to any part of the surface.

DORONICUM GERMANICUM. See ARNICA.

DULCAMARA [Ed.] *Sitipites.*

Solanum Dulcamara Lin.

Bitter sweet, or woody nightshade; the stalk.

This plant grows wild in moist hedges, and climbs on the bushes with woody brittle stalks. The taste of the twigs and roots, as the name of the plant expresses, is both bitter and sweet: the bitterness being first perceived, and the sweetness afterwards. The dulcamara was formerly much esteemed as a powerful medicine. It is in general said to occasion some considerable evacuation by sweat, urine, or stool, particularly the latter. It has been recommended as a discutient and resolvent medicine, and it has been said to be attended with good effects in obstinate cutaneous diseases of the herpetic kind. It has also been used, and sometimes with advantage, in cases of rheumatism, jaundice, and obstructed menstruation. It has principally been employed under the form of watery infusion, sometimes under that of extract.

EBULUS

EBULUS [Succ.] Radix, forma, baccæ.

Sambucus Ebulus Lin.

Dwarf elder; the root, leaves, and berries.

This plant grows wild in some counties of England; but about London it is rarely met with, unless in gardens; the eye distinguishes little difference between it and the elder tree except in the size; the elder being a pretty large tree, and the dwarf elder only an herb three or four feet high. The leaves, roots, and bark of *ebulus* have a nauseous, sharp, bitter taste, and a kind of acrid ungrateful smell: they are all strong cathartics, and as such are recommended in dropries, and other cases where medicines of that kind are indicated. The bark of the root is said to be strongest; the leaves the weakest. But they are both too drastic medicines for general use: they sometimes evacuate violently upwards, almost always nauseate the stomach, and occasion great uneasiness of the bowels. By boiling, they become like other drastics, milder, and more safe in operation. Fernelius relates, that by long coction they entirely lose their purgative virtue. The berries of this plant are likewise purgative, but less virulent than the other parts. A rob prepared from them may be given, even to the quantity of an ounce, as a cathartic; and in smaller ones as an aperient and deobstruent in chronic disorders: with this last intention, it is said by Haller to be frequently used in Switzerland, in the dose of a drachm.

ELATERIUM. See **CUCUMIS AGRESTIS.**

ELEMI [Lond.] Resina.

Myrris elemifera Lin.

Gum elemi.

This is a resin brought from the Spanish West Indies, and sometimes from the East-Indies, in long roundish cakes, generally wrapped up in flag leaves. The best sort is softish, somewhat transparent, of a pale whitish yellow colour, inclining a little to green, of a strong, not unpleasant, smell. It almost totally dissolves in pure spirit, and sends over some part of its fragrance along with this menstruum in distillation: distilled with water, it yields a considerable quantity of pale coloured, thin, fragrant essential oil. This resin gives name to one of the official ointments, and it is at present scarcely any otherwise used; though it is certainly preferable for internal purposes to some others which are held in greater esteem.

ELEUTHERIA. See **CASCARILLA.**

ENDIVIA [Brun.] Semen.

Cichoreum Endivia Lin.

Endive; the seed.

Endive is raised in gardens for culinary use. It is a gentle cooler and aperient, nearly of the same quality with the *cichoreum*.

ENULA CAMPANA

[Lond.] Radix.

HELENIUM [Ed.] Radix.

Inula Helenium Lin.

Elecampane; the roots.

This is a very large downy plant, sometimes found wild in moist rich soils. The root, especially when dry, has an agreeable aromatic smell: its taste, on first chewing, is glutinous, and as it were somewhat rancid; in a little time it discovers an aromatic bitterness,

terness, which by degrees becomes considerably acrid and pungent. Elecampane root is principally recommended for promoting expectoration in humoral asthma and coughs: liberally taken, it is said to excite urine, and loosen the belly. In some parts of Germany, large quantities of this root are candied, and used as a stomachic, for strengthening the tone of the viscera in general. Spirituous liquors extract its virtues in greater perfection than watery ones: the former scarcely elevate any thing in distillation: with the latter an essential oil arises, which concretes into white flakes: this possesses at first the flavour of the elecampane, but is very apt to lose it in keeping. An extract made with water possesses the bitterness and pungency of the root, but in a less degree than one made with spirit.

ERUCA [Brun.] Semen.

Brassica Eruca Lin.

Rocket: the seeds.

This was formerly much cultivated in gardens for medicinal use, and for sallads; but is at present less common. In appearance, it resembles mustard; but is easily distinguishable by the smoothness of its leaves, and its disagreeable smell. The seeds have a pungent taste, of the mustard kind, but weaker: they have long been celebrated as aphrodisiacs; and may, probably, have in some cases a title to this virtue, in common with other acrid plants.

ERYNGIUM [Lond.] Radix.

Eryngium maritimum Lin.

Eryngo; the root.

This plant grows plentifully in some of our sandy and gravelly

shores; the roots are slender, and very long; of a pleasant sweetish taste, which on chewing them for some time, is followed by a light degree of aromatic warmth and acrimony. They are accounted aperient and diuretic, and have also been celebrated as aphrodisiac; their virtues, however, are too weak to admit them under the head of medicines.

EUPATORIUM [Brun.]

Herba.

Eupatorium cannabinum Lin.

Hemp agrimony; the plant.

This plant is found wild by the sides of rivers and ditches. It has an acrid smell, and a very bitter taste, with a considerable share of pungency. The leaves are much recommended for strengthening the tone of the viscera, and as an aperient; and are said to have excellent effects in the dropsy, jaundice, cachexies, and scorbutic disorders. Boerhaave informs us, that this is the common medicine of the turf-diggers in Holland, against scurvy, foul ulcers, and swellings in the feet, to which they are subject. The root of this plant is said to operate as a strong cathartic: but it is not used in Britain, and has no place in our pharmacopœias.

EUPHORBIIUM [Succ.] Gum-

mi resina.

Euphorbia officinarum Lin.

Euphorbium.

This gummi resinous substance is a spontaneous exudation from a large oriental tree. It is brought to us immediately from Barbary, in drops of an irregular form; some of which on being broken are found to contain little thorns, small twigs, flowers, and other vegetable matters; others are hollow,

hollow, without any thing in their cavity: the tears in general are of a pale yellow colour externally, but somewhat white within: they break easily between the fingers. Lightly applied to the tongue, they affect it with a very sharp biting taste; and, on being held for some time in the mouth, they prove vehemently acrimonious, inflaming and exulcerating the fauces, &c. Euphorbium is extremely troublesome to pulverise; the finer part of the powder, which flies off, affecting the head in a violent manner. The acrimony of this substance is so great as to render it unfit for any internal use: several correctors have been contrived to abate its virulence; but the best of them are not to be trusted: and as there seems to be no real occasion for it, unless for some external purposes, we think, with Hoffman and others, that it ought to be expunged from the catalogue of internal medicines. And accordingly it has now no place in the London or Edinburgh pharmacopœias; but is still retained in most of the foreign ones, and is sometimes used as a sternutatory.

EUPHRASIA [*Brun.*] *Folia.* *Euphrasia officinarum* Lin.

Eye-bright; the leaves.

This is a very low plant, growing wild in moist fields. It was formerly celebrated as an opthalmic, both taken internally and applied externally. Hildanus says, he has known old men of seventy, who had lost their sight, recover it again by the use of this herb: later practitioners, however, have not been so happy as to observe any such good effects from it. At present it is totally, and not unjustly, disregarded.

FABA [*Rosf.*] *Seemh.*

Vicia Faba Lin.

Beans; the feed.

Beans are of greater use for culinary than medical purposes; they are a strong stultent food, sufficiently nutritious, but not easy of digestion, especially when grown old. A water distilled from the flowers has been celebrated as a cosmetic, and still retains its character among some female artists.

FERRUM [*Lond. Edin.*]

Limatura, Squame, Rubigo, Limatura Saccharata vulgo Mars Saccharatus; Ferrum vitriolatum.
Iron.

Iron cemented with animal or vegetable coal, forms steel.

Steel is accounted less proper for medicinal use than the softer iron, as being more difficultly acted on by the animal juices and the common menstrua: iron dissolves readily in all acids, and rusts freely in the air, especially if occasionally moistened with water; steel requires a longer time for its solution, and does not rust so easily.

The general virtues of these metals, and several preparations of them, are, to constringe the fibres, to quicken the circulation, to promote deficient secretions, and at the same time repress inordinate discharges into the intestinal tube. By the use of them, the pulse is very sensibly raised; the colour of the face, though pale before, changes to a florid red; the alvine, urinary, and cuticular excretions, are increased. Nidorous eruptions, and the fæces voided being of a black colour, are marks of the medicine taking due effect.

An aperient virtue is usually attributed to some of the preparations of iron, and an astringent to others; but in reality, they all produce

duce the effects both of aperients and astringents, and seem to differ only in degree. Those distinguished by the name of astringent sometimes occasion a very copious discharge of urine, or a diarrhoea; while those called aperient frequently stop these evacuations.

Where either preternatural discharge, or suppression of natural secretions, proceeds from a languor, this metal will suppress the flux, or remove the suppression; but where the circulation is already too quick, and the solids too tense and rigid, or where there is any stricture or spasmodic contraction of the vessels; iron, and all the preparations of it will aggravate the symptoms.

Though the different preparations of iron act all in the same manner, yet they are not equally proper in all constitutions. Where acidities abound in the first passages, the crude filings reduced into a fine powder, prove more serviceable than the most elaborate preparation of them. On the other hand, where there is no acid in the primæ viæ, the metal ought to be dissolved in some saline menstruum; hence a solution of iron in acid liquors has in many cases excellent effects, where, as Boerhaave observes, the more indigestible preparations, as the calces made by fire, have scarcely any effect at all. If alkalescent juices be lodged in the stomach, this metal, though given in a liquid form, proves at least useless; for here the acid solvent is absorbed by the alkaline matters which it meets with in the body, so as to leave the iron reduced to an inactive calx.

Chalybeate medicines are likewise supposed to differ, independently of differences in the constitution, according to the nature

of the acid united with the metal: vegetable acids superadd a deturgency and aperient virtue; combined with the vitriolic, it acts in the first passage as a powerful aperient; while the nitrous renders it extremely styptic, and the muriatic still more so. The different preparations of iron will be more particularly mentioned afterwards.

Iron is the only metal which seems naturally friendly to the animal body.

Its chief preparations are the prepared filings and rust, the tincture, the salt, and the martial flowers, or *ferrum ammoniacale*; and these are used principally in cases of weakness and relaxation, whether attended with morbid discharges, or morbid suppressions.

FILIX [Lond. Ed.] Radix.

Polypodium Filix mas Lin.

Common male fern; the root.

Several species of the fern root had formerly a place in the materia medica, and the present article seems to have been employed at least as early as the days of Dioscorides, for the purpose for which it is now used in medicine. It was however entirely neglected, till some years ago, a remedy employed by Madame Nonfer of Switzerland for the cure of the trœnia, claimed the attention of the practitioners of France. Her secret, after being tried at Paris under the direction of some of the most eminent physicians, was purchased by the French king, and afterwards published. Since that time, the filix mas has been introduced into the pharmacopœias both of the London and Edinburgh colleges.

The filix mas is a vegetable growing in great abundance in almost

almost every part of Britain where the ground is not cultivated. The greatest part of the root lies horizontally, and has a number of appendages placed close to each other in a vertical direction, while a number of small fibres strike downwards. The large root, together with its appendages, are to be reserved for use.* The two ends, however, are to be cut off, the one being too old and spongy, the other too new and green.

This root, under the form of powder, is found to be a very effectual cure for the tænia lata, or tape-worm. It sometimes also, although not with equal certainty, succeeds in the removal of the tænia cucurbitina, or gourd-worm.

Two or three drachms of the powder are taken in the morning, no supper having been taken the night before. It generally creates a slight sickness. A brisk cathartic with calomel is given a few hours after, which sometimes brings off the tænia entire; if not, the same course must be followed at due intervals.

After being long kept in the shops, its activity is much diminished. It ought therefore to be used as soon as it is taken out of the ground, being brought to a state fit for reducing it to powder by drying it before the fire.

FLAMULA JOVIS [Edin.]

Folia, flores.

Clematis recta Lin.

Upright virgin's bower; the leaves and flowers.

This article is introduced into but few of the modern pharmacopœias, and has never been much employed in Britain. As well as many other active articles, supposed to be of a poisonous nature, it was some time ago recommended to the

attention of practitioners by Dr Stoerk of Vienna.

Its leaves and flowers are so acrid as to blister. Dr Stoerk recommends it in venereal, cancerous and other cutaneous affections, in those headachs, pains of the bones, and washings of the habit, the consequences of lues venerea. Externally the powder is sprinkled on the ulcers; the forms for internal use are the infusion and extract.

FENICULUM DULCE

[Lond.] *Semen* [Ed.] *Semen, Radix.*

Anethum Feniculum Lin.

Sweet fennel; the seeds and root.

The seeds of fennel have an aromatic smell, and a moderately warm, pungent taste, and a considerable degree of sweetness. A simple water is prepared from them in the shops; they are ingredients in the compound spirit of junipers and some other official compositions.

The root is far less warm, but, has more of a sweetish taste, than the seeds: Boerhaave says, that this root agrees in taste, smell, and medical qualities, with the celebrated *ginger* of the Chinese; from which, however, it appears to be very considerably different.

The leaves of fennel are weaker than either the roots or seeds, and have very rarely been employed for any medicinal use.

FENUM GRÆCUM [Lond.

Ed.] Semen.

Trigonella Fœnum-græcum Lin.

Fenugreek; the seed.

This plant is cultivated chiefly in the southern parts of France, Germany, and Italy; from whence the seeds are brought to us. They are of a yellowish colour, a rhomboidal figure, a disagreeable strong smell

smell, and a mucilaginous taste. Their principal use is in cataplasms, fomentations, and the like, and in emollient glysters. They entered the *oleum e mucilaginis* of the shops; to which they communicate a considerable share of their smell. But this formula is now rejected.

FORMICÆ CUM ACERVO

[Succ.]

Formica rufa Lin.

Ants.

These insects are at present not employed by us in medicine, though formerly much celebrated for aphrodisiac virtues. They enter the *aqua magnanimitatis*, and other compositions of foreign dispensatories. These animals contain a truly acid juice, which they shed in small drops on being irritated; by infusing a quantity of live and vigorous ants in water, an acid liquor is obtained nearly as strong as good vinegar. Neumann observes, that on distilling them either with water or pure spirit, a clear limpid oil arises, which has scarcely any taste, or at least is not hot or pungent like the essential oils of vegetables.

In some of the foreign pharmacopœias, they are the basis of an *oleum formicarum*, a *spiritus formicarum*, and a *spiritus formicarum acidus*.

FRAGA [Succ.] Fructus

vacuus, folia.

Fragaria vesca Lin.

Strawberry; its leaves and fruit.

The leaves are somewhat styptic and bitterish; and hence may be of service in debility and laxity of the viscera; and immoderate secretions, or a suppression of the natural evacuations, depending thereon: they are recommended in hæmorrhagies and fluxes; and

likewise as aperients, in suppression of urine, obstructions of the viscera, in the jaundice, &c. The fruit is in general very grateful both to the palate and stomach: like other fruits of the dulco-acid kind, they abate heat, quench thirst, loosen the belly, and promote urine; but do not afford much nourishment. Geoffroy observes, that the urine of those who eat liberally of this fruit, becomes impregnated with its fragrant smell.

FRAXINELLA, see DICTAMNUS ALBUS.

FRAXINUS [Succ.] Cortex et semen.

Fraxinus excelsior Lin.

The ash-tree, its bark and seeds.

The bark of this tree is moderately astringent, and as such has sometimes been used. It has also been proposed as a substitute for the Peruvian bark in the cure of intermittents; but its efficacy is not confirmed by experience. The seeds, which are somewhat acrid, have been employed as aperients. There are so many other medicines more agreeable, and more efficacious for these intentions, that all the parts of the ash-tree have long been neglected.

FULIGO LIGNI [Ed.]

Wood foot.

This concrete is of a shining black colour, a disagreeable smell, and an acrid, bitter, nauseous taste. Its chief use is in hysteric and other nervous cases, in which it is sometimes given in conjunction with the fetid gums. Its virtues are extracted both by watery and spirituous liquors; each of which, if the foot be of a good kind, dissolve about one sixth. Soot is said

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to

to differ greatly in quality according to the wood from which it is produced: the more resinous the wood, the more the foot abounds with bitter oily matter. On chemical analysis, it yields volatile and fixed alkali, empyreumatic oil, and earth.

FUMARIA [Ed.] *Folia.*

Fumaria officinalis Lin.

Fumitory; the leaves.

This is a common weed in shady cultivated grounds, producing spikes of purplish flowers. It is very juicy, of a bitter taste, without any remarkable smell. The medical effects of this herb are, to strengthen the tone of the bowels, gently loosen the belly, and promote the urinary and other secretions. It is principally recommended in melancholic, scorbutic, and cutaneous disorders; for opening obstructions of the viscera, and promoting evacuations. Frederick Hoffman had a very high opinion of it as a purifier of the blood; and assures us, that for this purpose scarcely any plant exceeds it. Both watery and spirituous menstrua extract its virtues.

GALANGA MINOR

[Brun.] *Radix.*

Maranta Galanga Lin.

Galangal; the root,

This root is brought from China, it comes to us in pieces scarcely an inch long, and not half so thick, full of joints, with several circular rings on the outside; of an aromatic smell, and a bitterish, hot, biting taste. Galangal is a warm stomachic bitter: it has been frequently prescribed in bitter infusions, but the flavour it gives is not agreeable.

GALBANUM [Lond. Ed.]

Gummi resina.

Bubon Galbanum Lin.

Galbanum; the gum.

This is the concrete juice of an African plant; as brought to us, it is semipellucid, soft, tenacious; of a strong, unpleasant smell; and a bitterish warm taste: the bitter sort is in pale-coloured masses, which on being opened, appear composed of clear white tears. Geoffroy relates, that a dark greenish oil is to be obtained from it by distillation, which, on repeated rectifications, becomes of an elegant sky blue colour. The purer sorts of galbanum are said to dissolve entirely in wine, vinegar, or water; but these liquors are only partial menstrua of it; nor do spirit of wine, or oils, prove more effectual in this respect: the best solvent is a mixture of two parts spirit of wine and one of water. Galbanum agrees in virtue with gum ammoniacum; but is generally accounted less efficacious in asthma, and more so in hysterical complaints. It is an ingredient in the gum pills, the gum plaster, and some other official compositions.

CALLA [Lond. Ed.]

Cynipidis nidus.

Galls.

These are excrescences found upon the oak tree: they are produced by a kind of insect (the cynips) which wounds the young buds or branches, and deposits one of its eggs in the incision: Some of the juice of the tree exudes from the wound, and the callous edges of it increase to a tubercle which serves as a nest for the egg of the animal. After the egg is hatched the animal eats its way

way through : those galls which have no hole are found to have the insect remaining in them. The best galls come from Aleppo : they are not quite round and smooth like the other sorts, but have several tubercles on the surface. Galls have a very austere styptic taste without any smell : they are very strong astringents, and as such have been sometimes used both internally and externally, but are not much taken notice of by the present practice.

Some recommend an ointment of powdered galls and hogs lard as very effectual in certain painful states of hæmorrhoids ; and it is alleged, that the internal use of galls has cured intermittents after Peruvian bark has failed. A mixture of galls with a bitter and aromatic has been proposed as a substitute for the bark.

GAMBOGIA [Lond. Ed.]

Gummi resina.

Gambogia Gutta Lin.

Gamboge ; the gum resin.

Gamboge ; a solid concrete juice, brought from the East Indies in large cakes or rolls. The best sort is of a deep yellow or orange colour, breaks shining and free from dross. It has no smell, and very little taste, unless kept in the mouth for some time, when it impresses a slight sense of acrimony. It immediately communicates to spirit of wine a bright golden colour, which almost entirely dissolves it ; Geoffroy says, except the sixth part. Alkaline salts enable water to act upon this substance powerfully as a menstruum : the solution made by their means is somewhat transparent, of a deep blood-red colour, and passes the filtre : the dulcified spirit of sal ammoniac

readily and entirely dissolves it, and takes up a considerable quantity ; and what is pretty remarkable, this solution mixes either with water or spirit, without growing turbid.

Gamboge evacuates powerfully both upwards and downwards ; some condemn it as acting with too great violence, and occasioning dangerous hypercathartes ; while others are of a contrary opinion. Geoffroy seems particularly fond of this medicine, and informs us, that he has frequently given from two to four grains, without its proving at all emetic ; that from four to eight grains both vomits and purges without violence ; that its operation is soon over ; and that if given in a liquid form, and sufficiently diluted, it does not need any corrector ; that in the form of a bolus or pill, it is most apt to prove emetic, but very rarely has this effect if joined along with *Calomel*. He nevertheless cautions against its use where the patients cannot easily bear vomiting. It has been used in dropsy with cream of tartar or jalap, or both, to quicken their operation. It is also recommended by some to the extent of fifteen grains with an equal quantity of vegetable alkali in cases of the tape-worm. This dose is ordered in the morning ; and if the worm is not expelled in two or three hours, it is repeated even to the third time with safety and efficacy. It is asserted, that it has been given to this extent even in delicate habits.

This is said to be the remedy alluded to by Baron Van Swieten, which was employed by Dr Herarschward, and with him proved so successful in the removal of the tania lata.

GENISTA

GENISTA [*Lond.*] *Cacumen*,
Jemen. [Ed.] summitates.

Spartium Scoparium Lin.

Broom; the tops and seed.
The leaves of this shrub have a nauseous bitter taste: decoctions of them loosen the belly, promote urine, and stand recommended in hydropic cases.

The flowers are said to prove cathartic in decoction, and emetic in substance; though in some places, Lobel informs us, they are commonly used, and in large quantity, in salads, without producing any effect of this kind. The qualities of the seeds are little better determined: some report, that they purge almost as strongly as hellebore, in the dose of a drachm and a half; while the author above mentioned relates, that he has given a decoction of two ounces of them as a gentle emetic.

An infusion of a drachm of well powdered and sifted brown seed, for twelve hours, in a glass and a half of rich white wine, taken in the morning fasting, is recommended in an anonymous pamphlet as a sovereign remedy in dropsy. The patient is afterwards to walk or ride for an hour and an half, and then to swallow two ounces of olive oil. This method is to be repeated every second, or third day, till the cure be completed.

Broom ashes have been long recommended in dropsies; and are particularly celebrated by Dr Sydenham. But the efficacy of this medicine depends entirely on the alkaline salt, and not in the smallest degree on the vegetable from which it is obtained by burning.

GENTIANA [*Lond. Ed.*]
Radix.

Gentiana lutea Lin.

Gentian; the root.

This plant is found wild in some parts of England: but the dried roots are most commonly brought from Germany. They should be chosen fresh, and of a yellow or bright gold colour within. This root is a strong bitter; and as such very frequently used in practice: in taste it is less exceptionable than most of the other substances of this class. Infusions of it, flavoured with orange-peel, are sufficiently grateful. It is the capital ingredient in the bitter wine-tincture, and infusion of the shops. An extract made from it is likewise an official preparation.

This useful bitter is not employed under the form of powder, as it loses its virtue considerably by drying, which is requisite for giving it that form.

A poisonous root was some years ago discovered among some of the gentian brought to London; the use of which occasioned violent disorders, and in some instances death. This is easily distinguishable by its being internally of a white colour, and void of bitterness. This poisonous simple seems to be the root of the aconitum; a plant with which Lobel informs us the inhabitants of some parts of the Alps used formerly to empoison darts.

GEOFFRÆA [*Ed.*] *Cortex.*

Geoffræa inermis Lin.

Cabbage tree; the bark.

The bark of this tree, which grows in the low savannahs of Jamaica, is of a grey colour externally, but black and furrowed on the inside. It has a mucilaginous and sweetish taste, and a disagreeable

disagreeable smell. It is given in cases of worms, in form of powder, decoction, syrup, and extract. The decoction is preferred; and is made by slowly boiling an ounce of the fresh dried bark in a quart of water, till it assume the colour of Madeira wine. This sweetened is the syrup; evaporated, it forms an extract. It commonly produces some sickness and purging: sometimes violent effects, as vomiting, delirium, and fever. These last are said to be owing to an over-dose, or to drinking cold water; and are relieved by the use of warm water, castor oil, or a vegetable acid. It should always be begun in small doses. When properly and cautiously administered, it is said to operate as a very powerful anthelmintic, particularly for the expulsion of the lumbrici, which are a very common cause of disease in the West-India islands; and there it is very frequently employed. But it has hitherto been little used in Britain.

GINSENG [Lond. Ed.] Radix.

Panax quinquefolium Lin.

Ginseng; the root.

Ginseng is a small root; what is used in Britain is chiefly brought from North America: sometimes from China; but much more frequently the American ginseng is carried from Britain to China. Every root is an inch or two long, taper, finely striated, of a whitish or yellowish colour. It has a very sweet taste, accompanied with a slight bitterness and warmth.

The Chinese are said to have a very extraordinary opinion of the virtues of this root, and to

consider it as an universal restorative in all decays, from age, intemperance, or disease. The great value there set upon it, has prevented its being exported thence into other countries, and its discovery in North America is but of late date; so that among us it has hitherto been very rarely used; although, from what can be judged of it from the taste, it seems to deserve some regard, especially as it is now procurable in plenty.

GLADIOLUS. Sec Iris PALUSTRIS.

GLYCYRRHIZA [Lond.

Ed.] Radix.

Glycyrrhiza glabra Lin.

Liquorice; the root.

This is produced plentifully in all the countries of Europe: that which is the growth of our own is preferable to such as comes from abroad. The powder of liquorice usually fold is often mixed with flour, and perhaps too often with substances not quite so wholesome: the best sort is of a brownish yellow colour, the fine pale yellow being generally sophisticated, and it is of a very rich sweet taste, much more agreeable than that of the fresh root. Liquorice is almost the only sweet that quenches thirst; whence it is called by the Greeks *adipsos* Galen takes notice, that it was employed with this intention in hydroptic cases, to prevent the necessity of drinking. Mr Fuller, in his *Medicina Gymnastica*, recommends this root as a very useful pectoral, and says it excellently softens acrimonious humours, at the same time that it proves gently detergent: and this account is warranted by experience. It is

is an ingredient in several compounds. An extract is directed to be made from it in the shops, but this preparation is brought chiefly from abroad, though the foreign extract is not equal to such as is made with proper care among ourselves.

GRAMEN [Succ.] Radix.

Triticum repens Lin.

Quick grass; the roots.

Grass roots have a sweet roughish taste. They are principally recommended in aperient spring drinks, for what is called purifying and sweetening the blood.

GRANA PARADISI

[Brun.] *FruBus.*

Anomum Granum paradisi Lin.

Grains of paradise.

The fruit known by this name is brought from the East-Indies. It is about the size of a fig, divided internally into three cells, in each of which are contained two rows of small seeds like cardamoms. These seeds are somewhat more grateful, and considerably more pungent, than the common cardamoms, approaching in this respect to pepper, with which they agree also in their pharmaceutical properties; their pungency residing, not in the distilled oil, as that of cardamoms does, but in the resin extracted by spirit of wine.

GRANATUM [Lond.] *Floris*
petalum, Balautium dictum, *Fruitus* Cortex.

GRANATA MALUS [Ed.]

Cortex FruBus, *Flores pleni* Balautia dicti.

Punica Granatum Lin.

Pomegranate; the flowers cal-

led *balaufine*, and rind of the fruit.

The pomegranate is a low tree, or rather shrub, growing wild in Italy and other countries in the south of Europe: it is sometimes met with in our gardens; but the fruit, for which it is chiefly valued, rarely comes to such perfection as in warmer climates. This fruit has the general qualities of the other sweet summer fruits, allaying heat, quenching thirst, and gently loosening the belly. The rind is a strong astringent, and as such is occasionally used. The flowers are of an elegant red colour, in appearance resembling a dried red rose. Their taste is bitterish and astringent. They are recommended in diarrhoeas, dysenteries, and other cases where astringent medicines are proper.

GRATIOLA [Lond. Ed.]

Herba.

Gratiola officinalis Lin.

Hedge hyssop; the leaves.

This is a small plant, met with among us, only in gardens. The leaves have a very bitter, disagreeable taste; an infusion of a handful of them when fresh, or a drachm when dried, is said to operate strongly as a cathartic. Kramer reports, that he has found the root of this plant a medicine similar in virtue to ipecacuanha.

This herb has been mentioned as useful in the venereal disease: and it has been highly extolled in maniacal cases.

GUAIAACUM [Lond. Ed.]

Lignum, cortex. *gummi resina.*

Guaiacum officinale Lin.

Guaiacum; its wood, bark, and resin.

The guaiacum is a tree growing

in the warmer parts of the Spanish West Indies.

The wood is very ponderous, of a close compact texture; the outer part is of a yellow colour, the heart of a deep blackish green, or variegated with black, green, pale, and brown colours: the bark is thin, smooth, externally of a dark greyish hue: both have a slightly aromatic, bitterish, pungent taste; the bark is somewhat the weakest. The resin which exudes from incisions made in the trunk of the tree is brought to us in irregular masses, usually friable, of a dusky greenish, and sometimes of a reddish cast, with pieces of the wood among them: its taste is more acrid and pungent than that of the wood or bark.

Their general virtues are those of a warm stimulating medicine; they strengthen the stomach and other viscera; and remarkably promote the urinary and cuticular discharges; hence in cutaneous desquations, and other disorders proceeding from obstructions of the excretory glands, they are eminently useful: rheumatic and other pains have often been relieved by them. The resin is the most active part, and the efficacy of the wood and bark depends on the quantity of the resin contained in them: the resin is extracted from the wood in part by watery liquors, but much more perfectly by spirituous ones; the resin is given from a few grains to a scruple, or half a drachm, which last dose proves for the most part considerably purgative. The official preparations of guaiacum are a solution of the gum in rectified spirit of wine, and a solution in volatile spirit.

Guaiacum in decoction has been

said to cure the venereal disease; and in this country it is frequently used as an adjuvant to mercury. The resin dissolved in rum, or combined with water, by means of mucilage or the yolk of egg, or in the form of the volatile tincture or elixir, is much employed in gout and chronic rheumatism. The tincture has been given to the extent of half an ounce twice a day, and is sometimes usefully combined with laudanum.

GUMMI AMMONIACUM.
See AMMONIACUM.

GUMMI ARABICUM.
See ARABICA.

GUMMI ELEMI. See ELEMI.

GUMMI TRAGACANTHA. See TRAGACANTHA.

GUTTAGAMBA. See GAMBogia.

HÆMATITES Lapis [Brun.]
Hæmatites, or bloodstone.

This is an elegant iron ore, extremely hard, of a dark reddish or yellowish colour: it is found either along with other ores of iron, or in distinct mines by itself. Its medical virtues do not vary from those of rust, and the common croci of iron, notwithstanding the extraordinary opinion which many have entertained of it; such as its curing ulcers of the lungs, which Geoffroy says the hæmatites dries and heals.

HÆMATOXYLUM [Lond.]
lignum, vulgo lignum campechianum.
LIGNUM CAMPECHENSE
SE five HÆMATOXYLUM
[Edin.] lignum.

Hæma-

Hamatoxylum campechianum Lin.

Logwood or Campeachy wood.

This wood is brought chiefly from Campeachy in the bay of Honduras. It is usually in large logs, very compact and hard, of a red colour, and an astringent sweet taste. It has been for a long time used by the dyers, but not till lately as a medicine; a decoction of it, and the extract, are used in our hospitals, and are said to have proved very serviceable in diarrhœa. It frequently tinges the stools, and sometimes the urine. The extract is now received into the shops; and it is found to be a very useful astringent.

HEDERA ARBOREA

[*Brun.*] *Folia, resina.*

Hedera Helix Lin.

Ivy; the leaves and resin.

This is a climbing shrubby plant, growing commonly on the trunks of trees, or on old walls. The leaves have rarely been given internally: notwithstanding they are strongly recommended against the atrophy of children; their taste is nauseous, acrid, and bitter. Externally, they have sometimes been employed for drying and healing ichorous sores, and for keeping issues open. The berries were supposed by the ancients to have a purgative and emetic quality; later writers have recommended them in small doses, as diaphoretics and alexipharmics; and Mr Boyle tells us, that, in the London plague, the powder of them was given in vinegar with good success, as a sudorific. It is probable the virtue of the composition was rather owing to the vinegar than to the powder. The resin was ranked by the ancients (if their *anaxagoras* is right)

was the same with our *gummi lida* (see) among the depilatories.

HEDERA TERRESTRIS

[*Ed.*] *Herba.*

Glechoma hederacea Lin.

Ground ivy; the leaves.

Ground-ivy is a low plant, frequent in hedges and shady places. It has an aromatic though not very agreeable smell; and a quick, bitterish, warm, taste. This herb is an useful corroborant, aperient, and detergent; and hence stands recommended against laxity, debility, and obstructions of the viscera: it was extolled for cleansing and healing ulcers of the internal parts, even of the lungs; and for purifying the blood. It is customary to infuse the dried leaves in malt liquors; a practice nor to be commended, though it readily communicates its virtues to them, and helps to fine them down: scarce any other herb has this effect more remarkably than ground ivy.

HELLENIUM. See ENULA

CAMPANA.

HELLEBORASTER

[*Lond*] *Folium.*

Helicborus fatidus Lin.

Bears foot; the leaves.

The leaves of this plant, taken in several different forms, have been recommended as a very powerful antheimintic. They are particularly extolled by Dr Bisset in his Essay on the Medical Constitution of Great Britain, especially under the form of syrup, made by moistening the leaves of the fresh herb in vinegar, and then pressing out their juice, which is formed into a syrup with coarse sugar. Of this syrup, Dr Bisset gave to children from two to six years

years of age, one tea spoonful at bed-time and another in the morning, for two or three days successively. The dose was increased or diminished, according to the strength of the patient. And in this way he found it very successful in the expulsion of lumbrici.

Where the helleboraster is to be employed, this form is perhaps the best, and it may succeed where others have failed; but it should not be employed till safer anthelmintics have been tried in vain: for the imprudent administration of it has been sometimes attended with fatal consequences.

HELLEBORUS ALBUS

[*Lond.*] *Radix*

VERATRUM [*Ed.*] *Helleborus albus*, *Radix*.

Veratrum album *Lin.*

White hellebore; the root.

This plant grows spontaneously in Switzerland and the mountainous parts of Germany. The root has a nauseous, bitterish, acrid taste, burning the mouth and fauces: if wounded when fresh,

it emits an extremely acrimonious juice, which mixed with the blood, by a wound, is said to prove very dangerous: the powder of the dry root, applied to an issue, occasions violent purging; snuffed up the nose, it proves a strong, and not always a safe sternutatory. Taken internally it acts with extreme violence as an emetic, and has been observed, even in a small dose, to occasion convulsions, and other terrible disorders. The patients sometimes employed it in very obdurate cases, and always made it their last resource. Modern practice seems to have almost entirely rejected its internal use, though some practitioners have

lately ventured on so large a dose as a scruple, in maniacal cases, and have found good effects from it after the stronger antimonial preparations had been given in vain. A tincture and honey of it were formerly kept in the shops, but are now rejected from the London pharmacopœia. The former is still retained by the Edinburgh college, but it is very rarely, if ever, used.

HELLEBORUS NIGER

[*Lond.*] *Radix*.

MELAMPODIUM [*Edin.*] *Radix*.

Helleborus niger *Lin.*

Black hellebore, or melampodium; the roots.

This plant grows wild in the mountainous parts of Switzerland, and Austria: the earliness of its flowers, which sometimes appear in December, has gained it a place in our gardens.

In some parts of Germany, a species of black hellebore has been used, which frequently produced violent, and sometimes deleterious effects: this the Wirtemberg college particularly caution against, though without mentioning any marks by which it may be distinguished, or even giving the precise name of the plant. It appears to be the *Helleborus* above described, whose roots are paler than those of the black hellebore. The roots of the poisonous aconites resemble in appearance those of the black hellebore; and in the Bierslaw collections we find some instances of fatal effects occasioned by mistaking the one for the other: these also are happily distinguishable, by their colour; the *aconitum* being lighter coloured than even the palest of the black hellebores.

The

The taste of hellebore is acrid and bitter. Its acrimony, as Dr Grew observes, is first felt on the tip of the tongue, and then spreads immediately to the middle, without being much perceived on the intermediate part; on chewing it for a few minutes, the tongue seems benumbed, and affected with a kind of paralytic stupor, as when burnt by eating any thing too hot: the fibres are more acrimonious than the head of the root from which they issue. Black hellebore root, taken in doses of from fifteen grains to half a drachm, proves a strong cathartic: and as such has been celebrated for the cure of maniacal, and other disorders proceeding from what the antients called *atra bilis*. It does not however appear, that our black hellebore acts with so much violence as that of the antients: whence many have supposed it to be a different plant; and indeed the descriptions which the antients have left us of their hellebore, do not agree with any of the sorts usually noticed by modern botanists. Another species has been discovered in the eastern countries, which Tournefort distinguishes by the name of *helleborus niger orientalis*, *amplissimus folio*, *caule præalto*, *flore purpurascente*; and he supposes it to be the true ancient hellebore, from its growing about Mount Olympus, and in the island of Anticyra, celebrated of old for the production of this antimanial drug: he relates, that a scruple of this sort, given for a dose, occasioned convulsions.

Our hellebore is at present principally considered as an alterative: and is frequently employed, in small doses, for promoting the uterine and urinary discharges, and

opening inveterate obstructions of the glands: it often proves a very powerful emmenagogue in plethoric habits, where steel is ineffectual or improper. An extract made from this root with water, is one of the mildest, and for the purposes of a cathartic the most effectual preparation of it, operating sufficiently, without occasioning the irritation which the pure resin does. A tincture drawn with proof spirit contains the whole virtue of the hellebore, and seems to be one of the best preparations of it when designed for an alterative: this tincture and the extract, are kept in the shops.

The melampodium is the basis of Becher's tonic pills for the dropsy. The root is ordered to be macerated in rectified spirit of wine, the liquor expressed is repeatedly mixed with water and duly evaporated. This is made up into pills with an extract of myrrh and powder of carduus benedictus. They are said to be cathartic and diuretic, and at the same time tonic.

HERMODACTYLUS

[Brun.] *Radix.*

Iris tuberosa Lin.

Hermodactyl.

This is a root brought from Turkey. It is of the shape of a heart flattened, of a white colour, compact, yet easy to cut or powder; of a viscous sweetish taste, with a slight degree of acrimony.

Hermodactyls were of great repute among the antients as a cathartic: but these we now meet with in the shops have very little purgative virtue; Neumann declares he never found them to have any effect at all.

HIPPOCASTANUM [Ed.]

Fructus.

Æsculus

Esculus Hippocastanum Lin.

Horfe-chefnut; the fruit.

This fruit has been used as food for sheep and poultry, and as sope for washing. It was much employed in powder as a sternutatory by an itinerant oculist, and has been recommended by some others in certain states of ophthalmia, headach, &c. in which errhines are indicated.

Its effects as a sternutatory may also be obtained by using it under the form of infusion or decoction drawn up into the nostrils. It is entirely with a view to its errhine power that it is now introduced into the pharmacopœia of the Edinburgh college. The bark has also been represented as a cure for intermittent fevers; and it is probably with this intention that this part of the hippocastanum is introduced as an official article into the Pharmacopœia Rossica.

HORDEUM [*Lond. Ed.*]

Semen, omni corici nudatum.

Hordeum distichon Lin.

Barley, and pearl barley.

Barley is a well-known farinaceous grain. Pearl-barley is prepared by grinding the shell barley into little round granules, which appear of a kind of pearly whiteness.

Barley, in its several states, is more cooling, less glutinous, and less nutritious, than wheat or oats: among the antients, decoctions of it were the principal aliment and medicine in acute diseases. Both a simple and compound decoction of barley are introduced into our pharmacopœias.

HORMINUM SATIVUM
[*Brun.*] *Herba.*

Horminum Salvia Lin.

Garden clary; the leaves and seeds.

These have a warm, bitterish pungent taste; and a strong, not very agreeable smell: the touch discovers in the leaves a large quantity of glutinous or resinous matter. They are principally recommended in the fluor albus, and other female weaknesses, in hysterical disorders, and in flatulent colics.

HYDRARGYRUS, five ART.
GENTUM VIVUM. [*Lond. Ed.*]

Mercury, or quicksilver,

Mercury is an opaque silver-coloured mineral fluid; appearing to the eye like tin or lead when melted: it is 15 times heavier than water; it remains fluid in great degrees of cold, and congeals at 40 degrees below 0 of Fahrenheit's scale. In the fire it proves totally volatile. This mineral is either met with in its fluid form in the earth; or extracted by art from certain ores. There are considerable mines of it in Hungary and Spain. What is employed in Britain comes chiefly from Hungary.

The use of mercury in medicine seems to have been little known before the fifteenth century. The antients considered it as a corrosive poison, though of itself perfectly void of acrimony, taste, and smell: there are examples of its having been lodged, for years, in cavities both of bones and fleshy parts, without its having injured or affected them. Taken into the body in its crude state, and undivided, it passes through the intestines unchanged, and has not been found to produce any considerable effect. It has indeed been recommended in asthma and disorders

disorders of the lungs; but the virtues attributed to it in these cases have not been warranted by experience.

Notwithstanding the mildness and inactivity of crude quicksilver undivided; yet when resolved by fire into the form of fume, or otherwise divided into very minute particles, and prevented from re-uniting by the interposition of proper substances, or when it is combined with mineral acids, it has very powerful effects; affording the most violent poisons, and the most excellent remedies with which we are acquainted.

The mercurial preparations, either given internally or introduced into the habit by external application, seem to forward circulation through even the minutest and most remote vessels of the body; and may be so managed as to promote all the excretions through the emunctories. Hence their common use in inveterate chronic disorders, and obstinate obstructions of the excretory glands; in cutaneous diseases; and in the venereal lues. If their power be not restrained to certain emunctories, they tend chiefly to affect the mouth; and occasion a plentiful evacuation from the salivary glands.

The salutary effects of mercurials do not depend on the quantity of sensible evacuation. This medicine may be gradually introduced into the habit, so as, without occasioning any remarkable discharge, to be productive of very happy effects. To answer this purpose, it should be given in very small doses, in conjunction with such substances as determine its action to the kidneys or the pores of the skin. By this me-

thod inveterate cutaneous and venereal distempers have been cured, without any other sensible exertion than a gentle increase of perspiration or urine. Ulcers which discharge for some time a very fetid matter, discharge gradually less, and at length kindly heal, by a long continued use of mercury. If the mercury should at any time, from cold, or the like, affect the mouth, it may be restrained by omitting a dose, and by warm or suitable medicines promoting the perspiration. Cooling purgatives are also often employed with advantage; but perhaps the most effectual means of giving with safety a sudden check to a mercurial salivation is by the application of a large blister to the back.

Mercury, as used in medicine, has been employed in a very great variety of forms. Of the preparations directed by the London and Edinburgh colleges, we shall afterwards treat in particular: but to give a full and comprehensive view of them we shall here subjoin Dr Black's table in which they are systematically arranged.

Quicksilver is prepared for medicinal purposes,

I. By distillation, in order to procure it pure.

Hydragyrus purificatus. Lond.

II. By triture, that it may be exactly divided.

Plumbæ Hydragryi. Ed. et Lond.

Hydragyrus cum creta. Lond.

Emplastrum Hydragryi, five cretæ. Ed.

Emplastrum Lithargyri cum Hydragryo. Lond.

Ex-

Emplastrum Ammoniæ cum Hydrargyro. Lond.
 Unguentum Hydrargyri, five cærul. Ed.
 Unguentum Hydrargyri fortius et mitius. Lond.

III. By calcination, or the joint action of heat and air.

Hydrargyrus calcinatus.
 Vulgo, *Mercurius præcipitatus per se*.

IV. By the action of saline substances.

1. With the Vitriolic acid.

Hydrargyrus vitriolatus flavus, vulgo Turpethum minerale. Ed.
Hydrargyrus vitriolatus. Lond.

2. With the Nitrous acid.

Unguentum Hydrargyri nitrati. Ed. et Lond.
 Hydrargyrus nitratus ruber. Ed. et Lond.

3. With the Muriatic acid.

Hydrargyrus muriatus corrosivus Ed.
Hydrargyrus muriatus. Lond.
 Hydrargyrus muriatus mitis. Ed.
Calomelas. Lond.
 Hydrargyrus muriatus præcipitatus. Ed.
Hydrargyrus muriatus mitis. Lond.

4. With the Acetous acid or Vinegar.

Hydrargyrus acetatus. Ed. et Lond.
Pilule Kyselæ.

5. Precipitated by means of alkalies from its solution in acids.

Hydrargyrus præcipitatus cinereus. Ed.
Mercurius præcipitatus fuscus.
Calx hydrargyri alba. Lond.

Unguentum Calcis Hydrargyri albæ. Lond.

V. Combined with Sulphur.

Hydrargyrus sulphuratus niger. Ed.
Hydrargyrus cum Sulphure. Lond.
Hydrargyrus sulphuratus ruber. Lond.
 Pilulæ Hydrargyri muriati mitis, five Calomelanos, compositz. Ed.

Notwithstanding this great number of mercurial preparations, which however is small when compared with those in some of the foreign pharmacopœias, or in our own old ones, every useful purpose to be answered by mercury may be obtained from a very few. The mercurial preparations in general, may be divided into two great classes, the mild and acrid. Every purpose to be answered by the former, may be accomplished by the *Unguentum hydragyri* and *Pilule hydragyri* of the London and Edinburgh pharmacopœias; while the effects to be obtained from the latter may be derived from Calomel and Corrosive Sublimated Mercury.

The marks of pure mercury are, its globules not losing their spherical figure when poured on wood; its not communicating a tinge to water, or sweetness to vinegar, when rubbed with them; its evaporating entirely in an iron spoon over the fire; and its having a shining appearance without any pellicle on its surface. Mercury is best purified by distillation in an iron pot, with a long neck whose end is immersed in water.

Quicksilver has sometimes been used in its pure metallic state, with a view of removing obstruction in the alimentary canal, from an idea that it would operate by its weight. But it is seldom attended

ed with good effects, and sometimes it does harm.

An immense number of volumes have been written respecting its operation and use in different diseases, and particularly in venereal affections. Some authors refer its operation to an evacuant power, others to its operating as a peculiar stimulus, and others to its possessing a power of destroying or neutralising the venereal virus. Of these opinions, the last is the most generally received, and perhaps the best founded.

In virulent gonorrhœa, it is doubted whether mercury be necessary. This disease is commonly treated like any similar inflammation; and the chief things attended to are cleanliness of the parts, a regular belly, and an abstinence from every thing stimulant in food, drink, &c. An injection of oil with calomel, or white precipitate, is much used, and some prefer a watery solution of opium. The more active injections have sometimes very disagreeable consequences.

When the constitution is affected, which is known by ulcers on the glans, buboes, ulcers in the mouth or throat, copper coloured spots and ulcers on the surface, nodes, &c. mercury is thrown into the body either by friction or by the mouth. The general rule is, to keep up a slight soreness of the gums for some short time after the symptoms disappear; at the same time it is to be remembered, that mercury sometimes continues gleets, and induces ulcers, that are difficultly distinguished from venereal ones; and that these last only yield to warm bath, diaphoretic diluents, opiates, country air, and milk diet. Corrosive sublimate

is sometimes used, as more speedily arresting disfigureable, spreading, or dangerous ulcers; but the completion of the cure should always be trusted to the mild preparations alone. Mercury is also used in rabies canina, in worms, in hydrocephalus internus, in tetanus, and is considered as an antidote to the variolous matter.

HYDROLAPATHUM [Ed.] Radix.

Rumex aquaticus Lin.

Water-dock; the root.

The leaves of this dock gently loosen the belly, and have sometimes entered decoctions for removing a costive habit. The roots manifest to the taste a considerable astringency; they form an ink with iron, and are celebrated for the cure of scorbutic and cutaneous disorders, either exhibited internally, or applied externally in ointments, cataplasms, lotions, and fomentations. Muntingius published a treatise on this plant in 1681, in which he endeavours to prove, that our great water dock is the *herba Britannica* of the ancients. He therefore ascribes to the hydrolapathum all the virtues attributed to the *Herba Britannica*, particularly recommending it against scurvy and all its symptoms.

HYOSCYAMUS[Ed.]Herba, semen.

Hyoscyamus niger Lin.

Common black henbane; the herb and seeds.

This vegetable grows in great abundance in most parts of Britain: it has long been considered as one of the most deleterious poisons; but it nevertheless proves on many occasions a very useful medicine. The London college have given

given it no place in their list, and yet some of the London practitioners mention it as a remedy which they frequently employ with much benefit.

The smell of the hyoscyamus is strong and peculiar; and the leaves when bruised smell like tobacco. This smell is still stronger when the leaves are burnt; and on burning they sparkle with a deflagration somewhat resembling that of nitre; but to the taste they shew no evident saline impregnation. When chewed, they are insipid, mild, and mucilaginous; yet when taken to any great extent, they produce the most alarming effects. They give the appearances of intoxication, attended with delirium, remarkable dilatation of the pupils of the eyes, and convulsions. Hyoscyamus often produces sweat, and sometimes an eruption of pustules over the surface, and generally sound sleep, succeeded by serenity of mind and recruited vigour of the body: but like the other narcotics, it often gives rise to vertigo, headach, and general uneasiness. It sometimes occasions vomiting, colic pains, a copious flow of urine, and purging. On the whole, like opium, it is a powerful anodyne; and like cicuta is free from any constipating effect, having rather a tendency to move the belly.

From these effects it is not surprising that hyoscyamus should have been introduced into the practice of medicine; and accordingly, it appears to have been used both externally and internally for a variety of purposes. Several different species of the hyoscyamus were formerly employed, as appears from the writings of Dioscorides and others. Celsus, in par-

ticular, was very fond of this medicine; he used it externally as a collyrium in cases of ophthalmia: he employed it topically for allaying the pain of toothach; and he gave it internally, both with the view of mitigating other pains and of producing quiet sleep.

For a considerable length of time, however, hyoscyamus fell almost into disuse; but the employment of it has of late been revived by Dr Stoerk of Vienna; and it has been used both by him, and by many other practitioners in those cases where an anodyne is requisite, and where an objection occurs to the use of opium. It is employed for resolving swelling, and allaying pain in cases of scirrhus, under the form of cataplasm of the leaves, or of a plaster made from the oil of the seeds and powder of the herb, with wax, turpentine, and other articles; or of ointment made of the powder of the leaves with hog's lard. In open ulcers the powder of the leaves sprinkled on the part has often a good effect.

An extract from the leaves or from the seeds is the form in which it is given internally; but contrary to what happens with cicuta, the former appears to be the most powerful. This extract has been given with advantage in a variety of nervous affections, as mania, melancholia, epilepsy, hysteria, &c. in glandular swellings, in obstinate ulcerations; and in every case where it is necessary either to allay inordinate action or mitigate pain. In accomplishing these ends, it is often no less useful than opium; and it frequently succeeds where opium produces very disagreeable effects. The dose of this extract must be accommodated to the circumstances of

of the case and the patient; and it has been increased from half a grain to half a drachm in the day; for, like opium, its influence is very much diminished by habit.

HYPERICUM [Lond.] Flos.

Hypericum perforatum Lin.

St John's wort; the flowers.

This plant grows wild in woods and uncultivated places through Britain. Its taste is rough and bitterish, and its smell disagreeable. It abounds with an essential oil, which is contained in small vesicles in the growing plant. These vesicles, when viewed, by holding the plant between the eye and the light, resemble perforations; and the essential oil may be separated in considerable quantities by distillation. Hence there can be little doubt that it possesses active principles. At one period it was much employed, and highly celebrated as a corroborant, diuretic, and vulnerary; particularly in hysterical and maniacal disorders. It was even reckoned of such efficacy as to have received the name of *fuga demonum*; but for these extraordinary virtues there is probably not much foundation; and of late it has been so much neglected as even to lead to its omission in the two last editions of the Edinburgh Pharmacopœia.

This plant, however, is probably not without activity; and it is remarkable that the flowery tops tinge expressed oils of a red colour, which very few vegetable substances do, and communicate a blood red to rectified spirit.

HYSSOPUS [Ed.] Herba.

Hyssopus officinalis Lin.

Hyssop; the herb.

The leaves of hyssop have an

aromatic smell, and a warm, pungent taste. Besides, the general virtues of aromatics they are particularly recommended in humoral affluents, coughs, and other disorders of the breast and lungs; and are said to promote expectoration; but so little dependence is put upon any property of this kind that hyssop has now no place in the pharmacopœia of the London college.

JALAPIUM [Lond.] Radix.

JALAPA [Ed.] Radix.

Convolvulus jalapa Lin.

Jalap; the root.

Jalap is the root of an American plant, brought to us in thin transverse slices from Xalpa, a province of New Spain. The botanical characters of the vegetable which furnishes it are not absolutely ascertained; hence the London college have given it no Linnean name. But in the opinion of the best botanists it belongs to the genus of convolvulus as stated by the Edinburgh College.

Such pieces should be chosen as are most compact, hard, weighty, dark coloured, and abound most with black circular striæ. Slices of bryony root are said to be sometimes mixed with jalap: these may be easily distinguished by their whiter colour, and less compact texture.

Jalap in substance, taken in a dose of about half a drachm (less or more, according to the circumstances of the patient) is an effectual, and in general a safe purgative, performing its office mildly, seldom occasioning nausea or gripes, which too frequently accompany the other strong cathartics. In hypochondriacal disorders, and hot bilious temperaments, it gripes violently, but rarely takes due

due effect as a purge. An extract made by water purges almost universally, but weakly; and at the same time has a considerable effect by urine: the root remaining after this process gripes violently. The pure resin, prepared by spirit of wine, occasions, if taken alone, most violent gripings, and other distressing symptoms, but scarcely proves at all cathartic: triturated with sugar, or with almonds into the form of an emulsion, or dissolved in spirit and mixed with syrups, it purges plentifully in a small dose, without occasioning much disorder: the part of the jalap remaining after the separation of the resin, yields to water an extract, which has no effect as a cathartic, but operates powerfully by urine. The officinal preparations of Jalap are extracts made with water and spirit, a simple tincture, and a compound powder.

Frederick Hoffman particularly cautions against giving this medicine to children; and assures us, that it will destroy appetite, weaken the body, and perhaps occasion even death. In this point, this celebrated practitioner was probably deceived; children, whose vessels are lax, and the food soft and lubricating, bear these kinds of medicines, as Geoffroy observes, better than adults; and accordingly inoculators make much use of the powder mixed with simple syrup. The compound powder is employed in dropsy, as a hydragogue purge; and where stimulus is not contraindicated, jalap is considered as a safe cathartic.

JAPONICA TERRA. See CATECHU.

JASMINUM [Brun.] Flös.

Z

Jasminum officinale Lin
Jasmine; the flower.

This is a small tree, commonly planted in our gardens. The flowers have a strong agreeable smell; expressed oils extract their fragrance by infusion; and water elevates some of it in distillation, but no essential oil has hitherto been obtained from them: the distilled water, kept for a little time loses its odour. The medicinal virtues of these flowers are doubtful, although they have been recommended for promoting delivery, curing ulcerations of the uterus, &c.

ICHTHYOCOLLA [Lond.]

Ising-glass, or fish-glue.

This is a glutinous substance, obtained from different kinds of fish caught in the seas of Muscovy. The skin and some other parts of the animal are boiled in water, the decoction is inspissated to a proper consistence, and then poured out so as to form thin cakes: these are either farther exsiccated till perfectly dry, or cut while soft into slices, which are afterwards bent, or rolled up into spiral, horsehoe, and other shapes. This glue is more employed for mechanical purposes than in medicine. It may be given in the same manner as the vegetable gums and mucilages; regard being had to their different disposition to putrefcence.

It is also sometimes employed externally, with a view to its action as a glue.

IMPERATORIA [Ed.] Radix.

Imperatoria Ostruthium Lin.

Masterwort; the root.

This is a native of the Alps and Pyrenean mountains, and some parts

parts of Germany, from whence we are supplied with roots superior in aromatic flavour to those raised in our gardens. The odour of this root is very fragrant; its taste bitterish, warm, and pungent, glowing in the mouth for a long time after it has been chewed. Though undoubtedly an elegant aromatic, it is not regarded in the present practice; and accordingly it has no place in the London pharmacopœia.

IPECACUANHA [*Lond. Ed.*] *Radix.*

Ipecacuanh; the root.

The vegetable from which this root is obtained is not with certainty determined, any more than that of jalap.

The root is brought from the Spanish West Indies. It is divided into two sorts, Peruvian and Brazilian: but the eye distinguishes three, ash-coloured or grey, brown, and white. The ash-coloured, or Peruvian ipecacuanh of the shops, is a small wrinkled root, bent and contorted into a great variety of figures, brought over in short pieces full of wrinkles and deep circular fissures, quite down to a small white woody fibre that runs in the middle of each piece: the cortical part is compact, brittle, looks smooth, and resinous upon breaking: it has very little smell; the taste is bitterish and subacid, covering the tongue as it were with a kind of mucilage. The brown is small, and somewhat more wrinkled than the foregoing; of a brown or blackish colour without, and white within; this is brought from Brazil. The white sort is woody, has no wrinkles, and no perceptible bitterness in taste. The first sort, the

ash-coloured or grey ipecacuanh, is that usually preferred for medicinal use. The brown has been sometimes observed, even in a small dose, to produce violent effects. The white, though taken in a large one, has scarcely any effect at all; Mr Geoffroy calls this sort bastard ipecacuanh, and complains that it is an imposition upon the public. Geoffroy, Neumann, Dale, and Sir Hans Sloane inform us, that the roots of a kind of apocynum (dogs bane) are too frequently brought over instead of it; and instances are given of ill consequences attending the use of these roots. If the marks above laid down, particularly the ash-colour, brittleness, deep wrinkles, and bitterish taste, be carefully attended to, all mistakes of this kind may be prevented.

Ipecacuanh was first brought into Europe about the middle of last century, and an account of it published about the same time by Pifo; but it did not come into general use, till about the year 1686, when Helvetius, under the patronage of Lewis XIV. introduced it into practice. This root is one of the mildest and safest emetics with which we are acquainted; and has this peculiar advantage, that if it should not operate by vomit, it passes off by the other emunctories. It was introduced among us with the character of an almost infallible remedy in dysenteries, and other inveterate fluxes; in menorrhagia and leucorrhœa; and in disorders proceeding from obstructions of long standing: nor has it lost its reputation by time. In dysenteries, it almost always produces happy effects, and often performs a speedy cure. In other fluxes of

of the belly, in beginning dysenteries, and such as are of a malignant kind, or where the patient breathes a tainted air, it has not been found equally successful: in these cases it is necessary to continue its use for several days, and to join it with opiates, and diaphoretics. This root, given in substance, is as effectual, if not more so, than any of its preparations: the pure resin acts as a strong irritating emetic, but is of little service in dysenteries; while an extract prepared with water is almost of an equal service in these cases with the root itself, though it has little effect as an emetic. Geoffroy concludes from hence, that the chief virtue of ipecacuanh in dysenteries, depends upon its gummy substance, which lining the intestines with a soft mucilage, when their own mucus has been abraded, occasions their exulcerations to heal, and defends them from the acrimony of the juices: and that the resinous part, in which the emetic quality resides, is required, where the morbid matter is lodged in the glands of the stomach and intestines. But if the virtues of this root were entirely owing to its mucilaginous or gummy part, pure gums, or mucilages, might be employed to equal advantage. Water, assisted by a boiling heat, takes up from all vegetables a considerable portion of resinous along with the gummy matter: if the ipecacuanh remaining after the action of water be digested with pure spirit, it will not yield half so much resin as at first; so that the aqueous extract differs from the crude root only in degree, being proportionally less resinous, and having less effect, both as an emetic, and in the cure of dysenteries. The

virtues of ipecacuanh, in this disorder, depend upon its promoting perspiration, the freedom of which is here of the utmost importance, and an increase of which, even in healthy persons, is generally observed to suppress the evacuation by stool. In dysenteries, the skin is for the most part dry and tense, and perspiration obstrusted: the common diaphoretics pass off without effect through the intestinal canal: but ipecacuanh, if the patient after a puke or two be covered up warm, brings on a plentiful sweat. After the removal of the dysentery, it is necessary to continue the use of the medicine for some time longer, in order to prevent a relapse: for this purpose, a few grains divided into several doses, so as not to occasion any sensible evacuation, may be exhibited every day; by this means the cure is effectually established. And indeed small doses given, even from the beginning, have better effect in the cure of this disease than larger ones. Geoffroy informs us from his own experience, that he has observed ten grains of the powder to act as effectually as a scruple or two; and therefore confines the dose to between six and ten grains; it has lately been found, that even smaller doses prove sufficiently emetic. The official preparations of this root are a tincture made in wine, which accordingly has now the appellation of *vinum ipecacuanhe*, and a powder formerly called *Dover's powder*, but now named *Pulvis Ipecacuanhe compositus*, both in the London and Edinburgh pharmacopœias.

Many ingenious experiments have been made on the subject of ipecacuanh by Dr Irvine, for which he obtained the prize medal of the Harveian

Harveian Society at Edinburgh in 1784. He has ascertained, that this root contains a gummy resinous matter; that the gummy exsuits in a much greater proportion than the resinous part; that the gummy part is much more powerfully emetic than the resinous; that the cortical is more active than the ligneous part; and that the whole root possesses considerable influence, both as an antiseptic and astringent; that the distilled water has very little influence; but that the decoction which remained in the still, operated violently as an emetic, produced rigours, cold sweats, and other alarming symptoms; that by long continued boiling, the activity of the root is almost totally destroyed; that the emetic property of ipecacuanh was most effectually counteracted by means of the acetous acid; inasmuch that thirty grains of the powder taken in two ounces of vinegar, produced only some loose stools.

Ipecacuanh, particularly in powder, is now advantageously employed in almost every disease in which full vomiting is indicated; and when combined with opium as in the *Pulvis sudorificus*, it furnishes us with a very useful and active sweating medicine. It is also often given with advantage in very small doses, so as neither to operate by vomiting, purging, nor sweating.

The full dose of the powder of ipecacuanh is a scruple, or half a drachm, and double that in form of watery infusion. The full dose is recommended in the paroxysm of spasmodic asthma, and a dose of three or four grains every morning in habitual asthmatic indisposition. A dose of $\frac{1}{3}$ or $\frac{1}{2}$ grain rub-

bed with sugar, and given every four hours or oftener is recommended in uterine hæmorrhagy, cough, pleurisy, hæmoptoe, &c. and has often been found highly serviceable.

IRIS FLORENTINA.

[*Lond. Ed.*] *Radix.*

Iris florentina Lin.

Florentine orris; the root.

Several varieties of iris are cultivated in our gardens on account of the elegance of their flowers; but the Florentine orris is what is chiefly employed for medicinal purposes. The roots, when recent, have a bitter, acrid, nauseous taste, and when taken internally, prove strongly cathartic; and hence the juice is recommended in dropsies, in the dose of three or four scruples. By drying they lose this quality, yet still retain a somewhat pungent, biteous taste: their odour in this state is of the aromatic kind; those produced in the warmer climates have a very grateful flavour, approaching to that of March violets: hence the use of the Florentine orris in perfumes, and for flavouring liquors; the shops employ it in the *Trochisci amyli*.

IRIS PÁLUSTRIS [Ed.]

Radix.

Iris Pseudacorus Lin.

Yellow water-flag; the roots.

This plant grows in great abundance by the brinks of rivers, and in other watery places: the root has an acrid taste; and when fresh is strongly cathartic. The expressed juice, given to the quantity of sixty or eighty drops every hour or two, and occasionally increased, has been productive of very copious evacuation, after jaundice, gamboze, and other strong purgatives.

NA.

the fresh berries yield, on expression, a rich, sweet, honey-like, aromatic juice; if previously pounded, so as to break the seeds, the juice proves tart and bitter.

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The berries are good carminatives and stomachics, and are diuretic; for these purposes a compound spirit and essential oil distilled from them are kept in the shops: the liquor remaining after the distillation of the oil, passed through a strainer, and gently

proves likewise a medicine of great utility, and in many cases is

Rhamnus Zizyphus Lin.
Jujubes have a pleasant sweet taste. They are recommended in an acrimonious state of the fluids : in coughs from thin sharp defluxions ; and in heat of urine ; but they are at present, among us, a stranger in medicinal practice, and even in the shops.

ry excretion. This rob is of a dark brownish yellow colour, a balsa-

brownish yellow colour, a balsamic sweet taste, with a little of

Juniperus communis Lin.
Juniper; the berry and top.
This is an ever-green shrub growing on heaths and hilly grounds in all parts of Europe: the wood and resin are not at present used for medicinal purposes: the berries are brought from Holland and from Italy. The Italian berries are in general reckoned the best.

ployed in the same manner. KER.

KERMES [Brun.] Grana,

*succus.**Coccus, quercus cocciferæ Lin.*

Kermes; the grains.

These grains appear, when fresh, full of small reddish ovals, or animalcules, of which they are the nidus. On expression they yield a red juice, of a bitterish, somewhat rough and pungent taste, and not an unpleasant smell: this is brought to us from the south of France. The grains themselves are cured by sprinkling them with vinegar before exsiccation: this prevents the exclusion of the ova, and kills such of the animals as are already hatched; otherwise they change into a winged insect, leaving the grain an empty husk.

Kermes, considered as a medicine, is a grateful, mild astringent and corroborant. In this light it was considered by the Greeks: the Arabians added a cordial virtue: European writers also have in general recommended it for exhilarating the spirits, and against palpitations of the heart: it has also been particularly recommended, but without any good foundation, for promoting birth, and preventing abortion.

KINO [Lond. Ed.] Gummi resinæ.

Gummi rubrum astringens Gambiense. Obs. med. Lond.

Kino; the gum-resin.

Kino was first recommended to the attention of medical practitioners by Dr Fothergill, as being a very useful vegetable astringent; and in the hands of other practitioners it has been so far found to answer the character he gave of it, that it is now in very common use. It has a considerable resemblance to the catechu; but is of a

much more resinous nature, and of a less firm texture: it is also redder and more astringent; its watery solution is more decomposable by acids, and its ink less permanent. Its colouring and astringent matter are more perfectly taken up by spirit than by water, though water readily enough extracts a considerable share of both. It is used as an astringent in diarrhoea, hæmorrhagies, &c. In proof spirit it forms an elegant tincture; and it is a principal ingredient in the *pulvis aluminis compositus*, and some other official compositions.

LAC [Ross.]

Milk.

Milk is a secretion peculiar to the females of the order of mammalia. It may be considered as a kind of emulsion, consisting of butter, cheese, and whey; the whey containing a mucilaginous saccharine matter, which keeps the butter and cheese in union with its water; and it is from this sugary part that milk is subject to the vinous fermentation, as in the Russian Koumis, a vinous liquor made of mares milk, and recommended in phthisis and cases of weakness.

New milk mixes uniformly with common water, the mineral chalybeate waters, wines and malt liquors that are not acid, weak vinous spirits, solutions of sugar, sopes, and neutral salts; but not with oils expressed or distilled. Acids both mineral and vegetable coagulate it: as also do fix and volatile alkalies, and highly rectified spirit of wine: the curd made with acids is in part resolved again by alkaline liquors; as that made with alkalies likewise is by acids. Neutral salts, nitre in particular, pre-

préserve it from coagulating spontaneously; and render it less easily coagulable by acids.

The human milk is the sweetest of these liquors, and that of asses next to it: this last is the most dilute of them all: on suffering it to coagulate spontaneously, the curd scarcely amounted to two drachms from twelve ounces, while that of cows milk was five times as much: the coagulum of asses milk, even when made by acids, forms only into fine light flakes, which swim in the serum; that of goats milk concretes into more compact masses, which sink.

The saline substance obtained from asses milk was white, and sweet as sugar; those of the others brown or yellow, and considerably less sweet; that of cows milk, the least sweet of all. It appears, therefore, that asses milk contains more serum, and much more of a saccharine saline matter than those of cows and goats; and that the two latter abound most with unctuous gross matter: hence these are found to be most nutritious, while the first proves most effectual as an aperient and detergent.

The quantities of Saccharine matter in four ounces of

Sheep's milk is from	35 to 37 grs.
Goats	- 47 49
Cow's	- 53 54
Woman's	- 58 67
Mare's	- 69 70
Asses	- 80 82

The inspissated residuum of milk, digested with about as much water as was wasted in the evaporation, yields an elegant kind of whey, more agreeable in taste, and which keeps better than that made in the common manner,

This liquor promotes the natural secretions in general; and, if its use is duly continued, does good service in scorbutic and other disorders.

There are considerable differences in the milk of the same animal according to its different aliment. Dioscorides relates, that the milk of goats, who feed on scammony and spurge, proved cathartic: and examples are given in the *Acta Hassniensia* of bitter milk from the animal having eaten wormwood. It is a common observation, that cathartics and spirituous liquors given to a nurse, affect the child: and that the milk of animals feeding on green herbs, in much more dilute than when they are fed with dry ones. Hoffmann, from whom most of the foregoing observations are taken, carries this point so far, as to direct the animal to be dieted according to the disease for which its milk is to be drank.

LACCA [Succ.] *Gummi resina.*

Croton lacciferum Lin.

Lac, the gum resin.

Lac is produced by means of an insect of the cochineal kind.

The insect pierces the small branches of the tree, and the juice which exudes from the incision is formed by the insect into a nidus for its eggs; each separate nidus or cell has the appearance of a seed.

It is brought to us, either adhering to the sticks, or in small transparent grains, or in semitransparent flat cakes; the first is called *stick lac*, the second *seed lac*, and the third *shell lac*. On breaking a piece of stick lac, it appears composed of regular cells like honeycomb, with small corpuscles of a deep red colour lodged in them:

them : these are the young insects, and to these the lac owes its tincture ; for when freed from them, its colour is very dilute. The shell and seed lacs, which do not exhibit any insects or cellular appearance upon breaking, are supposed to be artificial preparations of the other : the seed fort is said to be the stick lac bruised and robbed of its more soluble parts ; and the shell to be the seed lac, melted and formed into cakes. The stick lac therefore is the genuine fort, and ought alone to be employed for medicinal purposes. This concrete is of great esteem in Germany, and other countries, for laxity and sponginess of the gums, proceeding from cold or from a scorbutic habit : for this use the lac is boiled in water, with the addition of a little alum, which promotes its solution ; or a tincture is made from it with rectified spirit. The tincture is recommended also internally in the flour albus, and in rheumatic and scorbutic disorders : it has a grateful smell, and a pleasant, bitterish, astringent taste. The principal use of lac among us, is in certain mechanic arts as a colouring drug, and for making sealing wax and varnishes.

LACTUCA SATIVA

[*Brun.*] *Folia, semina.*

Lactuca sativa Lin.

Garden lettuce, the leaves and seeds.

The several sorts of garden lettuces are very wholesome, emollient, cooling salad herbs, easy of digestion, and somewhat loosening the belly. Most writers suppose that they have a narcotic quality ; and indeed, in many cases, they contribute to procure

rest ; this they effect by abating heat, and relaxing the fibres.

LACTUCA VIROSA

[*Ed.*] *Folia.*

Lactuca viroscula Lin.

Strong scented wild lettuce.

This plant which is indigenous in Britain, and grows abundantly in some places, differs very essentially in its qualities from the garden lettuce.

It smells strongly of opium, and resembles it in some of its effects ; and its narcotic power, like that of the poppy heads, resides in its milky juice. An extract from the expressed juice, is recommended in small doses in dropsy. In dropsies of long standing, proceeding from visceral obstructions, it has been given to the extent of half an ounce a day. It is said to agree with the stomach, to quench thirst, to be gently laxative, powerfully diuretic, and somewhat diaphoretic. Plentiful dilution is allowed during its operation. Dr Collin of Vienna asserts, that out of 24 dropical patients, all but one were cured by this medicine.

LADANUM [*Lond*] *Resina,*

Cistus creticus Lin.

Ladanum ; the gum resin.

This resin is said to have been formerly collected from the beards of goats who browsed the leaves of the cistus : at present a kind of rake, with several straps or thongs of skins fixed to it, is drawn lightly over the shrub, so as to take up the unctuous juice, which is afterwards scraped off with knives. It is rarely met with pure, even in the places which produce it ; the dust, blown upon the plant mixing with the tenacious juice : the inhabitants

habitants are also said to mix with it a certain black sand. In the shops two sorts are met with: the best (which is very rare) is in dark-coloured almost black masses, of the consistence of a soft plaster, which grows still softer on being handled; of a very agreeable smell and of a slight pungent bitterish taste: the other sort is harder, not so dark coloured, and is coiled up in long rolls. Rectified spirit of wine almost entirely dissolves pure ladanum, leaving only a small portion of gummy matter which has no taste or smell: and hence this resin may be thus excellently purified for internal purposes. It is an useful ingredient in the stomachic plaster, now styled *Emplastrum ladanum*.

LAVENDULA [Lond. Ed.]

Spice florantes.

Lavendula Spica Lin.

Lavender; the flowering tops.

There are different varieties of this vegetable, particularly the narrow and broad leaved. The flowers of both have a fragrant agreeable smell, and a warm, pungent, bitterish taste; the broad-leaved sort is the strongest in both respects, and yields in distillation thrice as much essential oil as the other; its oil is also hotter and specifically heavier; hence in the southern parts of France, where both kinds grow wild, this only is used for the distillation of what is called oil of spike. The narrow leaved is the sort commonly met with in our gardens.

Lavender is a warm stimulating aromatic. It is principally recommended in vertigoes, palfies, tremors, suppression of the menstrual evacuations; and in general in all disorders of the head, nerves, and

A a

uterus. It is sometimes also used externally in fomentations for paralytic limbs. The distilled oil is particularly celebrated for destroying the *pediculi inguinales*, and other cutaneous insects: if soft spongy paper dipt in this oil, either alone, or mixed with that of almonds be applied at night to the parts infested by the insects, they will certainly, says Geoffroy, be all found dead in the morning. The officinal preparations of lavender are, the essential oil, simple spirit, and a compound tincture.

LAURUS [Lond.] *Folium, baccæ. [Ed.] Folia, Baccæ, baccarum oleum expressum.*

Laurus nobilis Lin.

Bay: the leaf and berry.

The berries of the bay are generally brought from the coasts of the Mediterranean: the tree bears the colds of our own climate.

They have a moderately strong aromatic smell, and a warm bitterish, pungent taste: the berries are stronger in both respects than the leaves, and afford in distillation a larger quantity of aromatic essential oil; they yield also an almost insipid oil to the press, in consequence of which they prove unctuous in the mouth. These simples are warm carminative medicines, and are sometimes exhibited with this intention against flatulent colics, and in hysterical disorders.

Their principal use, in the present practice, is in glysters, and some external applications. The leaves enter our common fomentation; and the berries, the plaster of cummin: they also gave name to an electuary, which was little otherwise used than in glysters.

LEN.

LENTISCUS [Brun.] Lig- num.

Pistacia lentiscus Lin.

The lentisc tree; the wood.

This tree or shrub is a native of the warm climates, but bears the common winters of our own. The wood is brought to us in thick knotty pieces, covered with an ash-coloured bark, white within, of a rough, somewhat pungent taste, and an agreeable, though faint smell; the smaller tough sprigs are the strongest both in taste and smell. This wood is accounted a mild balsamic astringent; a decoction of it is in the German ephemerides dignified with the title of vegetable *aurum potable*, and strongly recommended in catarrhs, nausea, and weakness of the stomach; for strengthening the tone of the viscera in general, and promoting the urinary secretion.

This is the tree which, in the island Chio, affords the resin called *massich*. See MASTICHE.

LEONTODON. See TARAXACUM.

LICHEN CINEREUS TERRESTRIS [Brun.]

Lichen caninus Lin.

Ash-coloured ground liverwort.

This consists of pretty thick digitated leaves, flat above, of a reticular texture underneath, and fastened to the earth by small fibres; the leaves when in perfection are of an ash-colour; by age they become dark coloured or reddish.

This simple is said to be a warm diuretic: but the taste discovers in it little or no warmth. It was celebrated for its virtue in the cure of the disorders occasioned by the bite of a mad dog. An

account of the remarkable effects of a powder composed of the dried leaves and pepper, in these cases, was communicated to the Royal Society by Mr Dampier, and published in the Philosophical Transactions. This powder was afterwards inserted (in the year 1721) into the London pharmacopœia, under the title of *pulvis antilyssus*, at the desire of Dr Mead, who had great experience of its good effects. Some years after, the Doctor published and dispersed a paper containing the method of cure, which he had in a great number of instances constantly found successful. In this paper the directions were to the following effect: "Let the patient be bled to the extent of nine or ten ounces: and afterwards take a drachm and a half of the powder every morning fasting, for four mornings successively, in half a pint of cow's milk, warm. After these four doses are taken, the patient must go into the cold bath, or a cold spring or river, every morning fasting for a month, he must be dipped all over, but not stay in (with his head above water) longer than half a minute, if the water be very cold: after this he must go in three times a-week for a fortnight longer." In the year 1745, the world was favoured with a new edition of the Mechanical Account of Poisons, in which we find the same method of cure again recommended, as having, in a course of thirty years experience, never failed of success; where it had been followed before the hydrophobia begun. It is greatly to be wished, that the efficacy of this medicine in preventing these terrible disorders, was proved by incontestible facts.

Influences

Instances have been produced of its proving unsuccessful; and the many examples of the fatality of the disease which continually occur, seem arguments either of the inefficacy of the medicine or a strange negligence in applying it. We shall only farther observe, that Boerhaave, who is in general sufficiently liberal in the commendation of remedies, ranks this among those insignificant trifles, which whoever depends on, will find himself deceived; and indeed this opinion is now so general, that this species of the lichen has no place in the present editions of our pharmacopœias, and is now rejected from most of the foreign ones.

LICHEN [Ed.] *Herba.*

Lichen islandicus Lin.

Eryngo-leaved, or eatable liverwort.

The leaves of this species of lichen are nearly erect, stiff when dry, and pliant when moist, irregularly divided into broad distant segments, smooth and ciliated at the margins. It is a native of this country. An ounce of it boiled in a pound of water, and strained, yields about seven ounces of a thick a mucilage as one part of gum Arabic dissolved in three parts of water. The Icelanders use it in diet. It is steeped in water to deprive it of its bitterness and cathartic quality, and the powder of it is made into pottage with milk or water. This diet is recommended in phthisis and scorbutus; and is said to be very nourishing, antiseptic, and gently laxative. The Edinburgh pharmacopœia, however, is the only one into which this species of lichen seems yet to be introduced. and few practitioners in Britain have much ex-

perience of it. If it have any effect, it is probably only as a mild article of diet.

LIGNUM CAMPECHENSE.

See HÆMATOXYLUM.

LIGNUM RHODIUM

[*Ros.*]

Geniſſa canariensis Lin.

Rosewood.

This wood or root is chiefly brought to us from the Canary islands. The writers on botany and the materia medica are much divided about the lignum rhodium, not only with regard to the plant which affords it, but likewise in their accounts of the drug itself, and have described, under this name, simples manifestly different. This confusion seems to have arisen from an opinion that the rhodium and aspalathus (an article of considerable esteem among the ancients, but with regard to which the moderns are very much at a loss) are the same; whence different woods, brought into Europe for the unknown aspalathus, were sold again by the name of rhodium.

In those modern pharmacopœias which admit the lignum rhodium, different Linnean names are at present given to it: the authors of the Dispensatorium Brunsvicense suppose it to be the rhodiola rosa of Linné, and they may perhaps be as near the truth as the authors of the Pharmacopœia Rossica.

As to aspalathus, the ancients themselves disagree; Dioscorides meaning by this appellation the wood of a certain shrub freed from the bark, and Galen the bark of a root. At present we have nothing under this name in the shops. What was heretofore sold among

us as aspalathus, were pieces of a pale coloured wood brought from the East Indies, and more commonly called *calambour*.

The aspalathus, calambour, and lignum aquilæ, are supposed to be woods of the nature of agallochum, or lignum aloes, but weaker in quality.

The lignum rhodium of the shops is usually in long crooked pieces, full of knots, which when cut appear of a yellow colour like box, with a reddish cast: the largest, smoothest, most compact, and deepest coloured pieces, should be chosen; and the small, thin, or pale ones rejected. The taste of this wood is slightly bitterish, and somewhat pungent; its smell very fragrant, resembling that of roses: long kept, it seems to lose its smell; but on cutting, or rubbing one piece against the other, it smells as well as at first. Distilled with water, it yields an odoriferous essential oil, in very small quantity. Rhodium is at present in esteem only on account of its oil, which is employed as an high and agreeable perfume in scenting pomatums and the like. But if we may reason from analogy, this odoriferous simple might be advantageously applied to more useful purposes; a tincture of it in rectified spirit of wine, which contains in a small volume the virtue of a considerable quantity of the wood, bids fair to prove a serviceable cordial, not inferior perhaps to any thing of this kind.

LIGUSTICUM [Ed.] *semen*,
Ligusticum Levisticum Lin.

Lovage; the seed.

This is a large umbelliferous plant, cultivated with us in gardens. The root nearly agrees in quality with that of angelica: the

principal difference is, that the lovage root has a stronger smell, and a somewhat less pungent taste, accompanied with a more durable sweetness: the seeds are rather warmer than the root. These simples, though certainly capable of being applied to useful purposes, are not at present regarded: neither of them is directed in extemporaneous prescription.

LILIUM ALBUM [Ed.]
Radix.

Lilium candidum Lin.

White lily; the root.

This is cultivated in gardens, more for the beauty of its flowers than for medicinal use. The mucilaginous root is sometimes used as a poultice; but it possesses no advantage over the poultices formed of vegetable farinæ.

LILIUM CONVALLIUM
[Succ.] *Flores*.

Convallaria maialis Lin.

Lily of the valley, or May lily; the flowers.

This plant grows wild in great abundance in woods and shady places, flowering in May. The flowers are said to be cephalic and nervine. They have a pleasant sweet smell, which they impart by infusion to expressed oils, and give over in distillation both to water and spirit; but no essential oil has been hitherto obtained from them. Et-muller says, that the distilled spirit is more fragrant than the water. The roots of the wild lily are very bitter: when dried, they are said to prove a gentle emmenagogue; as are also the flowers.

LIMON [Lond] *Succus, cortex exterior, et oleum essentia dictum*.
[Ed.] *Fructus, cortex fructus, et jus oleum vulgo essentia dictum*.
Citrus

Citrus medica Lin.

Lemon; the juice, outer rind, and its oil or essence.

The juice of lemon is a strong native vegetable acid. The yellow peel is an elegant aromatic, and is frequently employed in stomachic tinctures and infusions: it is considerably less hot than orange peel, and yields in distillation with water a less quantity of essential oil: its flavour is nevertheless more perishable, yet it does not rise so readily with spirit of wine; for a spirituous extract, made from lemon peel, possesses the aromatic taste and smell of the subject, in much greater perfection than an extract prepared in the same manner from the peels of oranges. In the shops, a syrup is prepared from the juice, and the peel is candied; the peel is an ingredient in the bitter infusions and wines; the essential oil enters the volatile aromatic spirit, *Spiritus ammonia compositus*, as it is now called, and some other formulæ.

LINARIA [Succ.] *Folia*.

Antirrhinum Linaria Lin.

Toad-flax; the leaves.

This grows wild on banks and about the sides of fields. It is said by some to be a powerful diuretic, whence it is named by *Tragus herba urinalis*, by others, to be a strong cathartic, inasmuch that *Branfelsius* has called it by a German name expressing this quality, *scheißkraut*. Experience scarcely warrants either of these appellations; nor does common practice take any notice of the plant.

LINGUA CERVINA. See *SCOLOPENDRIUM*.

LINUM CATHARTICUM

[*Rosé*.] *Herba*.

Linum catharticum Lin.

Purging-flax; the leaves.

This is a very small plant, not above four or five inches high, found wild upon chalky hills and in dry pasture-grounds. Its virtue is expressed in its title; an infusion in water or whey of a handful of the fresh herb, or a drachm of it in substance when dried, are said to purge without inconvenience.

LINUM SATIVUM [*Lond.*]

Semen. [*Ed.*] *Semen et oleum ejus expressum*.

Linum usitatissimum Lin.

Lintseed.

Lintseed yields, by pressing, a considerable quantity of oil; and boiled in water, a strong mucilage: these are occasionally used for the same purposes as other substances of that class; as are also the seeds themselves in emollient and maturating cataplasms. They have been employed in Asia, and, in times of scarcity, in Europe, as food; but are not agreeable, or in general wholesome. *Tragus* relates, that those who fed on them in Zealand, had the hypochondria much distended, and the face and other parts swelled, in a very short time: and that several died of these complaints. The expressed oil is an officinal preparation.

LIQUIDAMBRA [*Brun.*]

Resina.

Liquidambra syriacisua Lin.

Liquidamber.

This is a resinous juice which flows from a large tree growing in Virginia, Mexico, and other provinces of America. This juice is at first about the consistence of tur-

turpentine, but by long keeping hardens into a resin; it is of a yellow colour inclining to red, a warm taste, and a fragrant smell, not unlike that of storax heightened with a little ambergris. It was formerly of great use as a perfume; but is at present a stranger in the shops.

LITHARGYRUS. See PLUMBUM.

LIXIVA. See CINERES CAVELLATI.

LOBELIA [Ed.] Radix.

Lobelia sphyllitica Lin.

Lobelia; the root.

This plant grows in moist places in Virginia, and bears our winters. It is perennial, has an erect stalk three or four feet high, blue flowers, a milky juice, and a rank smell. The root consists of white fibres about two inches long, resembles tobacco in taste, and is apt to excite vomiting. It is used by the North American Indians as a specific in the venereal disease. The form is that of decoction; the dose of which is ordered to be gradually increased till it bring on very considerable purging, then to be intermitted for a little, and again used in a more moderate degree till the cure be completed. The ulcers are also washed with the decoction, and the Indians are said to spin-
kle them with the powder of the inner bark of the spruce tree. The same strictness of regimen is ordered as during a salivation or mercurial course. The benefit to be derived from this article has not, as far as we know, been confirmed either in Britain, or by the practitioners in Virginia: for there, as well as in this country, re-

course is universally had to the use of mercury; and probably from this reason the London college have not received it into their list. It seems, however, to be an article which deserves a trial.

LUJULA [Lond. Edin.] Folium.

Oxalis Acetosella Lin.

Wood sorrel; the leaves.

This is a small plant, growing wild in woods. In taste and medical qualities, it is similar to the common sorrel, but considerably more grateful, and hence is preferred. Boiled with milk, it forms an agreeable whey: and beaten with sugar, a very elegant conserve, which has been for some time kept in the shops, and not unfrequently employed.

LUPINUS [Brun.] Semen.

Lupinus albus Lin.

White lupines; the seeds.

These have a leguminous taste, accompanied with a disagreeable bitter one. They are said to be anthelmintic, both taken internally or applied externally. Calpar Hoffman cautions against their internal use, and tells us (from one of the Arabian writers) that they have sometimes occasioned death. Simon Pauli also says, that he saw a boy of eight or ten years of age, after taking a drachm of these seeds in powder, seized with exquisite pains of the abdomen, a difficulty of respiration, and almost total loss of voice; and that he was relieved from these complaints by a glyster of milk and sugar, which brought away a vast quantity of worms. But Mr Geoffroy observes, very justly, that either these symptoms were owing to the worms, and not to the medicine;

dicine; or that these seeds, if they have any noxious quality, lose it, with their bitterness, in boiling; since they were commonly used among the Greeks as food, and recommended by Galen as very wholesome.

LUPULUS [Succ.] *Strobili.*

Humulus Lupulus Lin.

Hops; the leafy heads.

These are one of the most agreeable of the strong bitters, though rarely employed for any medicinal purposes. Their principal consumption is in malt liquors, which they preserve from undergoing the acetous and putrefactive fermentations, render less glutinous, and dispose to pass off more freely by urine.

The odour of hops hung in a bed has been said to induce sleep after opium had failed.

Hops contain a very considerable proportion of essential oil; and in the manner in which they are commonly used in brewing, this has been hitherto almost entirely lost: but a late proposal has been made for preserving it as it arises, and restoring it to the brewed liquor; a discovery well meriting attention.

LYCOPERDON [Brun.]

Lyoperdon Bovista Lin.

Puff ball, or dusty mushroom.

This fungus is found in dry pasture grounds. It seems to be nearly of the same quality with the agaric of the oak; and has, like it, been employed for restraining external hæmorrhages and other fluxions. The fine dust with which it becomes filled by age, has also been applied with the same intentions.

MACIS. See MYRISTICA.

MAGNESIA VITRIOLATA. T.A. [Lond. Ed.] *Sal Catharticus Amarus.*

This salt is the salt of the Epom and some other purging mineral waters. It may also be extracted from the bitter liquor remaining after the crystallisation of common salt. We usually meet with it in minute crystals, of a snowy appearance; dissolved in water, and crystallised afresh, it concretes, if properly managed, into larger ones, of a rectangular prismatic figure, resembling those of the artificial cathartic salt of Glauber, for which they are sometimes substituted in the shops.

This salt has a penetrating bitterish taste; it dissolves in less than an equal weight of water; in a moderate heat, it melts, bubbles up into blisters, and soon changes into a white spongy mass, with the loss of above half of its weight: this salt tastes more bitter than the salt did at first, and totally dissolves again in water. The acid of this salt is the vitriolic: and its basis magnesia. Hence on adding alkaline salts to a solution of Glauber's salt no change ensues: while the salts obtained from the purging waters, or the bittern of marine waters, grow milky and deposit their earth, by the addition of the alkaline salt which is taken up in its place.

The magnesia vitriolata is a mild and gentle purgative, operating with sufficient efficacy, and in general with ease and safety, rarely occasioning any gripes, sickness, or the other inconveniences, which purgatives of the refinous kind are too often accompanied with. Six or eight drachms may be dissolved for a dose in a proper quantity of common water; or four,

four, five, or more, in a pint; or quart of the purging waters. These liquors may likewise be so managed as to promote evacuation, by the other emunctories; if the patient be kept warm, they increase perspiration: and by moderate exercise in a cool air, the urinary discharge. Some allege this salt has a peculiar effect in allaying pain, as in colic, even independently of evacuation.

MAJORANA [Lond. Ed.] *Herba.*

Origanum Majorana Lin.

Sweet marjoram; the leaves.

Marjoram is raised annually in our gardens for culinary as well as medicinal uses; the seeds are commonly procured from the southern parts of France, where the plant grows wild. It is a moderately warm aromatic, yielding its virtues both to aqueous and spirituous liquors by infusion, and to water in distillation. It is principally celebrated in disorders of the head and nerves, and in the humoral asthma and catarrhs of old people. An essential oil of the herb is kept in the shops. The powder of the leaves proves an agreeable erethine, and enters the official sternutatory powder.

MALVA [Lond. Ed.] *Folium,* *flos.*

Malva sylvestris Lin.

Mallow; the leaf and flower.

These have a somewhat mucilaginous sweetish taste. The leaves were formerly of some esteem, in food, for loosening the belly; at present, decoctions of them are sometimes employed in dysenteries, heat, and sharpness of urine, and in general for obtaining acrimonious humours; their princi-

pal use is in emollient glysters, cataplasms, and fomentations. The leaves enter the official decoction for glysters, and a conserve was formerly prepared from the flowers.

MANDRAGORA [Succ.] *Radix.*

Atropa Mandragora Lin.

Mandrake; the root.

The qualities of this plant are very doubtful: it has a strong disagreeable smell resembling that of the narcotic herbs, to which class it is usually referred; and it belongs indeed to the same genus as the deadly nightshade. It has rarely been any otherwise used in medicine, than as an ingredient in one of the old official ointments. Both that composition and the plant itself are now rejected from our pharmacopœias: but it still retains a place in most of the foreign ones, and may perhaps be considered as deserving farther attention.

MANNA [Lond. Ed.] *Succus concretus.*

Fraxinus Ornus Lin.

Manna.

Manna is the juice of a species of ash tree, growing in Italy and Sicily. When naturally concreted on the tree and scraped off, it is called manna in the tear: but if allowed to exude on straws or chips of wood fastened to the tree, it is called canulated or flaky manna. The common, or fat manna, is got by incisions made after the spontaneous exudation is over, and is in larger masses and of a redder colour. The best Calabrian manna is in oblong, light, friable pieces or flakes, of a whitish or pale yellow colour, and somewhat transparent. The inferior

terior kinds are moist, unctuous, and dark coloured. Manna is said to be sometimes counterfeited by a composition of sugar and honey, mixed with a little scammony: there is also a factitious manna, which is white and dry, said to be composed of sugar, manna, and some purgative ingredient, boiled to a proper consistence: this may be distinguished by its weight, solidity, untransparent whiteness, and by its taste, which is different from that of manna.

Manna is a mild, agreeable laxative and may be given with safety to children and pregnant women: nevertheless in some particular constitutions, it acts very unkindly, producing flatulencies and distention of the viscera; these inconveniences may be prevented by the addition of any grateful warm aromatic. Manna operates so weakly as not to produce the full effect of a cathartic, unless taken in large doses; and hence it is rarely given with this intention by itself. It may be commodiously dissolved in the purging mineral waters, or joined to cathartic salts, to senna, rhubarb, or the like. Geoffroy recommends acuating it with a few grains of emetic tartar; the mixture is to be divided into several doses, each containing one grain of the emetic tartar: by this management, he says, bilious serum will be plentifully evacuated, without any nausea, gripes, or other inconvenience. It is remarkable, that the efficacy of this drug is greatly promoted (if the account of Vallisneri is to be relied on) by a substance which is itself very slow of operation, cassia. And for this reason manna is an ingredient in the electuary of cassia.

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MARRUBIUM [Lond. Ed.]

Herba.

Marrubium vulgare Lin.

White horehound; the leaves. They have a very strong, not disagreeable smell, and a roughish very bitter taste. Besides the virtues which they possess in common with other strong bitters, they are supposed to be peculiarly serviceable in humoral asthma and coughs, the jaundice, and other chronic disorders. They are doubtless an useful aperient and deobstruent; they promote the fluid secretions in general, and, when liberally taken, loosen the belly.

MARUM SYRIACUM

[Lond.] Herba.

Taenium Marum Lin.

Syrian herb mastic.

This is a small shrubby plant, growing spontaneously in Syria, Candy, and other warm climates, and cultivated with us in gardens. The leaves have an aromatic bitterish taste; and when rubbed between the fingers, a quick pungent smell like volatile alkali, which soon affects the head and occasions sneezing: distilled with water, they yield a very acrid, penetrating essential oil, resembling that of scurvy-grass. These qualities sufficiently point out the uses to which this plant might be applied; at present it is little otherwise employed than in cephalic snuffs. It is an ingredient in the *pulvis asari compositus*, of the London pharmacopœia.

MASTICHE [Lon. Ed.] Resina.

Pistacia Lentiscus Lin.

Gum mastic.

Mastic is a resinous substance brought from Chio, in small, yellowish, transparent grains or tears,

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of an agreeable smell, especially when heated or set on fire. This resin is recommended in old coughs, dysenteries, hæmoptoes, weakness of the stomach, and in general in all debilities. Geoffroy directs an aqueous decoction of it to be used for these purposes. Water extracts little or nothing from this resin; rectified spirit almost entirely dissolves it: the solution tastes very warm and pungent; it is not however the basis of any fixed formula in our pharmacopœias, and is at present but little employed.

MATRICARIA [Succ.] *Herba.*

Matricaria Parthenium Lin.

Common wild featherfew; the leaves.

This plant was at one time much celebrated as an antihysteric medicine; but it is now so little employed in Britain, that it has no place in our pharmacopœias.

Simon Paulli relates, that he has experienced most happy effects from it in obstructions of the uterine evacuations; I have often seen, says he, from the use of a decoction of matricaria and chamomile flowers with a little mugwort, hysterical complaints instantly relieved, the discharge succeed plentifully, and the patient, from a lethargic state, return as it were into life again. Matricaria is likewise recommended in sundry other disorders, as a warm stimulating bitter: all that bitters and carminatives can do, says Geoffroy, may be expected from it. It is undoubtedly a medicine of some use in these cases, though not perhaps equal to chamomile flowers alone, with which the matricaria agrees in sensible qualities, excepting in being weaker.

MECHOACANNA [Brun.] *Radix.*

Convolvulus Mechoacanina Lin. Mechoacan; the root.

This is the root of an American convolvulus brought from Mechoacan, a province of Mexico, in thin slices like jalap, but larger, and of a whitish colour. It was first introduced into Europe about the year 1524, as a purgative universally safe, and capable of evacuating all morbid humours from the most remote parts of the body: but as soon as jalap became known, mechoacan gradually lost its reputation, which it has never since been able to retrieve. It is nevertheless still deemed an useful cathartic; it has very little smell or taste, and is not apt to offend the stomach; its operation is slow, but effectual and safe. Geoffroy affirms, that scarcely any purgative is accompanied with fewer inconveniences. It seems to differ from jalap only in being weaker: the resins obtained from both have nearly the same qualities, but jalap yields five or six times as much as Mechoacan; hence it is found necessary to exhibit the latter in six times the dose of the former, to produce the same effects.

MEL [Lond. Ed.]

Honey.

Honey is a juice, obtained from the honey comb, either by separating the combs, and laying them flat upon a sieve, through which the honey spontaneously percolates; or by including the comb in canvas bags, and forcing the honey out by a press: the first sort is the purest; the latter is found to contain a good deal of the matter of which the comb is formed, and sundry other impurities: there is another sort still inferior to the

two foregoing, obtained by heating the combs before they are put into the press. The best sort is thick, of a whitish colour, an agreeable smell, and a very pleasant taste; both the colour, and flavour differ according to the plants from which the bees collect it: that of Narbonne in France, where rosemary abounds, is said to have a very manifest flavour of that plant, and to be imitable by adding to other honey an infusion of rosemary flowers; and the Corsican honey has the taste and flavour of orange flowers.

Honey, considered as a medicine, is a very useful detergent and aperient, powerfully promoting the expectoration of tough phlegm: in some particular constitutions it has an inconvenience of griping or proving purgative: and hence the Edinburgh college do not now employ it in any preparation, and have entirely rejected the *mella medicata*, substituting syrups in their place: honey however doubtless is very useful in giving form to different articles, though there be some individuals with whom it may disagree.

MELAMPODIUM [Ed.]
See HELLEBORUS NIGER.

MELILOTUS [Succ.] Flores,
herba.

Trifolium Melilotus officinalis Lin.

Melilot; the leaves and flowers. This plant grows wild in hedges and among corn; and has likewise been cultivated for medicinal uses, in gardens. The green herb has no remarkable smell; when dry, a pretty strong one; the taste is roughish, bitter, and if long chewed, nauseous. A decoction of this herb has been recommended in inflammations of the abdomen; and a decoction of

the flowers in the *fluor albus*. But modern practice rarely employs it any otherwise than in emollient and carminative glysters, and in fomentations, cataplasms, and the like; and even in these not often. It formerly gave name to one of the official plaasters, which received from the melilot a green colour, but no particular virtue.

MELISSA [Lond. Ed.] *Folia.*
Melissa officinalis Lin.
Balm; the herb.

This plant, when in perfection, has a pleasant smell, somewhat of the lemon kind; and a weak, roughish aromatic taste. The young shoots have the strongest flavour: the flowers, and the herb itself, when old, or produced in very moist rich soils or rainy seasons, are much weaker both in smell and taste. Balm is appropriated by the writers on the *Materia Medica*, to the head, stomach, and uterus; and in all disorders of these parts is supposed to do extraordinary service. So high an opinion have some physicians entertained of balm, that they have expected to find in it a medicine which should prolong life beyond the usual period. The present practice however holds it in no great esteem, and ranks it, where it certainly deserves to be, among the weaker corroborants: in distillation it yields an elegant essential oil, in small quantity; the remaining decoction tastes roughish. Strong infusions of the herb, drank as tea, and continued for some time, have done service in a weak lax state of the viscera: these liquors, slightly acidulated with juice of lemons, turn of a fine reddish colour, and prove an useful, and to many a very grateful drink, in dry parching fevers.

MEN.

MENTHA CATARIA, See
NEPETA.

MENTHA PIPERITIS
[*Lond. Ed.*] *Herba.*

Mentha piperita Lin.

Peppermint; the leaves.

This species of mint grows wild in some parts of England in moist watery places, but is much less common than the other sorts. The leaves have a more penetrating smell than any of the other mints, and a much warmer, pungent glowing taste like pepper, sinking as it were into the tongue. The principal use of this herb is in flatulent, colics, languors, and other similar disorders: it seems to act as soon as taken, and to extend its effects through the whole system, instantly communicating a glowing warmth. Water extracts the whole of the pungency of this herb by infusion, and elevates it in distillation. Its officinal preparations are an essential oil, a simple water, and a spirit.

MENTHA SATIVA [*Lond. Ed.*] *Herba.*

Meniba viridis Lin.

Garden or spear mint; the leaves.

Both the London and Edinburgh pharmacopœias make it the *mentha viridis* of Linné, but in the Swedish pharmacopœia it is stated to be the *Meniba crispa*, of Linné; the reader may judge for himself which is right; but he must recollect that the Swedish pharmacopœia was compiled by a committee of the college of physicians at Stockholm; and this committee, consisting of several members, left the revision and publication of the pharmacopœia to two of their number, viz.

Linné and Bergman, the one the greatest naturalist, and the other the greatest chemist then in the world.

The leaves of this mint have a warm, roughish, somewhat bitterish taste; and a strong, not unpleasant aromatic smell. Their virtues are those of a warm stomachic and carminative: in loss of appetite, nausea, continual retchings to vomit, and as Boerhaave expresses it, almost paralytic weaknesses of the stomach, few simples are perhaps of equal efficacy. In colic pains, the gripes to which children are subject, liveries, and other kinds of immoderate fluxes, this plant frequently does good. It likewise proves beneficial in hysteric cases, and affords an useful cordial in languors and other weaknesses following delivery.

The best preparations for these purposes are, a strong infusion from the dry leaves in water (which is much superior to one from the green herb), or rather a tincture or extract prepared with rectified spirit. These possess the whole virtues of the mint: the essential oil and distilled water contain only the aromatic part; the expressed juice only the astringency and bitterness, together with the mucilaginous substance common to all vegetables. The essential oil, a simple water, a spirit, and a conserve, are kept in the shops.

MENYANTHES. See TAFOLIUM.

MERCURIALIS [*Gen.*]
Herba.

Alercurialis annua Lin.

Herb mercury: the leaves.

This herb is sometimes used in gly.

glysters. A syrup made from the leaves, given in the dose of two ounces, is said to prove a mild and useful laxative.

There is another sort of mercurialis growing in woods and hedgerges, which though recommended by some botanic writers as having the same virtues with the foregoing, and as being more palatable, has been found possessed of noxious qualities. This may be distinguished from the foregoing by its being a perennial plant, *Mercurialis perennis* Lin. by being larger, having its leaves rough and the stalk not at all branched: it is commonly called dog's mercury.

MERCURIUS. See HYDARGYRUS.

MEUM [*Brun.*] *Radix.*

Æthusa Meum Lin.

Spiguel; the root.

Spiguel is an umbelliferous plant, found wild in Italy and the warmer parts of Europe, and sometimes also in England. The roots have a pleasant aromatic smell, and a warm pungent bitterish taste: in virtue they are similar to the levillicum, from which this root seems to differ only in being weaker and somewhat more agreeable. It is an useful aromatic and carminative, though at present so little regarded as to have no place in our pharmacopœias.

MEZEREUM [*Lond. Ed.*]
radicis cortex.

Daphne Mezereum Lin.

Mezereon, or spurge olive; the bark of the root.

Mezereon, although an article of great activity, has only of late had a place in our pharmacopœias. It is a native of different parts of Europe; it has elegant pale purplish or white flowers,

sometimes appearing about the end of January. The root was long used in the Lisbon diet-drink, particularly for venereal complaints, nodes, and other symptoms resisting the use of mercury.

On chewing it a little, it proves very pungent, and its acrimony is accumulated about the fauces, and is very durable. It is employed chiefly under the form of decoction; and it enters the *Decoctio Sarsaparillæ compositum* of the London pharmacopœia; but it has also been used in powder combined with some inactive one, as that of liquorice root. It is apt to occasion vomiting and purging; so must be begun in grain doses, and gradually increased. It is often usefully combined with mercury. The bark of the root contains most acrimony, though some prefer the woody part. Mezereon has also been used with good effects in tumors and cutaneous eruptions not venereal.

MILLEFOLIUM [*Ed.*] *Folia,* *flores.*

Achillea Millefolium Lin.

Milfoil; the leaves and flowers.

This grows plentifully about the sides of fields, and on dry commons, flowering greatest part of the summer. The leaves have a rough bitterish taste, and a faint aromatic smell. Their virtues are those of a very mild astringent: and as such they stand recommended in hemorrhages both internal and external, in diarrhœas, and in spasmodic and hysterical affections. In these cases some of the Germans have a very high opinion of this herb, particularly Stahl, who esteemed it a very effectual astringent, and one of the most certain tonics and sedatives.

datives. Its virtues are extracted in great perfection by proof spirit; water takes up its altringency and bitterness, but little of its aromatic flavour; tinctures made in rectified spirit contain both, though they be rather weaker than those in proof spirit.

The flowers of milfoil are considerably stronger in aromatic flavour than the leaves; in distillation, they yield a small quantity of essential oil, of an elegant blue colour.

The roots, taken up in the spring, have an agreeable, warm, pungent taste. Dr Grew resembles them to contrayerva, and imagines they might in some degree supply its place: this, however, is much to be doubted, since there is such a remarkable difference between the two, that while one retains its taste for a length of time after it has been brought to us from America, the taste of the other is almost lost by drying.

MILLEPEDA [Lond. Ed.]

Oniscus asellus Lin.

Slaters or Millepedes.

These insects are found in cellars, under stones, and in cold moist places: in the warm countries they are rarely met with. Millepedes have a faint disagreeable smell, and a somewhat pungent, sweetish, nauseous taste. They have been highly celebrated in suppressions of urine, in all kinds of obstructions of the bowels, in the jaundice, weakness of sight, and a variety of other disorders. Whether they have any just title to these virtues, is greatly to be doubted: thus much is certain, that their real effects come far short of the character given of them. Their official preparations are, the millepedes dried and

powdered, and a vinous infusion, which is by some held in high esteem in cases of hooping cough.

MINIUM [Ed.] See *Plumbum*.

MORUS [Lond.] *Frustr.*

Morus nigra Lin.

Mulberry; the fruit.

This tree is commonly cultivated on account of its fruit which is rather eaten for pleasure than used as a medicine; it has the common qualities of the other sweet fruits, abating heat, quenching thirst, and promoting the secretions; an agreeable syrup made from the juice is kept in the shops. The bark of the roots has been in considerable esteem as a vermifuge; its taste is bitter, and somewhat astringent.

MOSCHUS [Lond. Ed]

Moschus moschiferus Lin.

Musk.

Musk is a grumous substance like clotted blood, found in a little bag, situated near the umbilicus of a ruminating animal met with in China, Tartary, and the East Indies: the best musk is brought from Tonquin, an inferior sort from Agria and Bengal, and a still worse from Russia.

Fine musk comes to us in round thin bladders; which are generally about the size of a pigeon's egg, covered with short brown hairs, well filled, and without any appearance of having been opened. The musk itself is dry, with a kind of unctuousity, of a dark reddish brown or rusty blackish colour, in small round grains, with very few hard black clots, and perfectly free from any sandy or other visible foreign matter. If chewed, and rubbed with a knife on paper, it looks smooth, bright, yellowish,

yellowish, and free from grittiness. Laid on a red hot iron, it catches flame, and burns almost entirely away, leaving only an exceeding small quantity of light greyish ashes; if any earthy substance have been mixed with the musk, the quantity of the residuum will readily discover them.

Musk has a bitter subacrid taste; a fragrant smell, agreeable at a distance, but disagreeable when too near, unless weakened by the admixture of other substances. If a small quantity be infused in spirit of wine in the cold for a few days, it imparts a deep, but not red tincture: this, though it discovers no great smell of the musk, is nevertheless strongly impregnated with its virtues; a single drop of it communicates to a whole quart of wine a rich musky flavour. And this flavour, which a tincture of musk communicates to vinous liquors, is perhaps one of the best criteria for judging of the goodness of musk. Neumann informs us, that spirit of wine dissolves ten parts out of thirty of musk, and that water takes up twelve; that water elevates its smell in distillation, while pure spirit brings over nothing.

Musk is a medicine of great esteem in the eastern countries: among us, it has been for some time much out of use, even as a perfume. It appears, however, from late experience, to be, when properly managed, a remedy of great service even against those disorders which it has been supposed to produce. Dr Wall has communicated (in the Philosophical Transactions, N^o 474), an account of some extraordinary effects of musk in convulsive and other diseases, which have too often baffled the force of medicine.

He observes, that the smell of perfume is often of disservice, where the substance taken inwardly, and in considerable quantity, produces the happiest effects: that two persons labouring under a subfultus tendinum, extreme anxiety, and want of sleep, from the bite of a mad dog, by taking two doses of musk, each of which were sixteen grains, were perfectly relieved from their complaints. He likewise observes, that convulsive hiccups, attended with the worst symptoms, were removed by a dose or two, of ten grains: and that in some cases, where this medicine could not, on account of strong convulsions, be administered to the patient by the mouth, it proved of service when injected as a glyster. He adds, that under the quantity of six grains, he never found much effect from it; but that, taken to ten grains, and upwards, it never fails to produce a mild diaphoresis, without at all heating or giving any uneasiness; that on the contrary, it eases pain, raises the spirits, and that after the sweat breaks out the patient usually falls into a refreshing sleep: that he never met with any hysterical person, how averse soever to perfumes, but could take it in the form of a bolus, without inconvenience. To this paper is annexed an account of some farther extraordinary effects of musk, observed by another gentleman. Repeated experience has since confirmed its efficacy in these disorders. The dose has sometimes been increased, particularly in convulsive disorders, to the quantity of a scruple or half a drachm every three or four hours, with two or three spoonfuls of the musk julep between. The julep is the only official preparation

tion of it. It is given combined with opium in tetanus, and with mercury in rabies canina.

It is probable that we are often disappointed of the good effects which this medicine might produce, from the muck with which the shops are supplied being previously adulterated.

MURIA. See SAL MURIATICUS.

MYRISTICA [Lond. Edin.]

Fructus nucleus nux moschata distus ;
macis ; *oleum expressum*, *oleum*
macis distum ; *oleum essentiale*.
Myristica moschata AB. Holm.

Nutmegs and mace.

Nutmegs are the kernel of a roundish nut which grows in the East-Indies. The outside covering of this fruit is soft and fleshy like that of a walnut, and spontaneously opens when the nut grows ripe : immediately under this lies the mace, which forms a kind of reticular covering ; thro' the fissures of which appears a hard woody shell that includes the nutmeg. These kernels have long

been used both for medicinal and culinary purposes, and deservedly considered as a warm agreeable aromatic. They are supposed likewise to have an astringent virtue ; and are employed with that intention in diarrhoeas and dysenteries. Their astringency is said to be increased by torrefaction, but this does not appear to the taste : this treatment certainly deprives the spice of some of its finer oil, and therefore renders it less efficacious, and, if we may reason from analogy, probably abates its astringency. Nutmegs distilled with water, afford a large quantity of essential oil, resembling in flavour the spice itself ; after the distillation, an inlipid sebaceous matter is found

swimming on the water ; the decoction, inspissated, gives an extract of an unctuous, very slightly bitterish taste, and with little or no astringency. Rectified spirit extracts the whole virtue of nutmegs by infusion, but elevates very little of it in distillation ; hence the spirituous extract possesses the flavour of the spice in an eminent degree.

Nutmegs yield to the press, when heated, a considerable quantity of limpid yellow oil, which on cooling concretes into a sebaceous consistence. In the shops we meet with three sorts of unctuous substances, called oil of mace, though really expressed from the nutmeg. The best is brought from the East-Indies, in stone jars ; this is of a thick consistence, of the colour of mace, and an agreeable fragrant smell : the second sort, which is paler coloured, and much inferior in quality, comes from Holland in solid masses, generally flat and of a square figure : the third, which is the worst of all, and usually called common oil of mace, is an artificial composition of sebum, palm oil, and the like, flavoured with a little genuine oil of nutmeg. The oils yield all that part in which their aromatic flavour resides, by distillation, to water, and by infusion to pure spirit : the distilled liquor, and spirituous tincture nearly resemble in quality those prepared immediately from the nutmeg. The officinal preparations of nutmegs are a spirit and essential oil, and the nutmegs in substance. Both the nutmeg itself and its essential oil enter several compositions, as the *confectio aromatica*, *spiritus aromaticus compositus*, &c.

Mace nearly agrees with nutmegs

megs in its medicinal qualities. The principal difference consists in mace being somewhat less astringent, and yielding a more fluid expressed oil, and a more volatile essential one.

MYROBALANI.

Myrobalans, dried fruits brought from the East Indies; their outward part freed from the stone.

Five kinds of myrobalans were formerly directed as officinals: all of them are supposed to be the produce of the same tree, but its botanical description is not yet ascertained.

All myrobalans have a gentle purgative virtue. They have also an astringent quality, discoverable by the taste, and from their striking a black colour with chalybeate solutions: in consequence of this, they are supposed to strengthen the bowels after their operation as a cathartic is over. Nevertheless their purgative virtue is so small that practitioners have for a long time laid them entirely aside with that intention; and the colleges of Edinburgh and London have now rejected them from the catalogue of officinal simples.

MYRRHA [Lond. Ed.] Gum-resina.

Myrrh; gum resin.

Myrrh is a concrete gummy resinous substance brought from the East-Indies, in globes or drops, of various colours and magnitudes. The best sort is of a brown or reddish yellow colour, somewhat transparent; of a lightly pungent, bitter taste, with an aromatic flavour, though not sufficient to prevent its proving nauseous to the palate; and a strong, not disagreeable smell. The medical effects

of this aromatic bitter are to warm and strengthen the viscera: it frequently occasions a mild diaphoresis, and promotes the fluid secretions in general.

Hence it proves serviceable in languid cases, in diseases arising from suppressions of the uterine discharges in cachectic disorders, and where the lungs and thorax are oppressed by vitcid phlegm.

Myrrh is likewise supposed, in a peculiar manner, to resist putrefaction in all parts of the body; and in this light stands recommended in malignant, putrid, and pestilential fevers, and in the small-pox.

The present practice does not seem to expect any peculiar virtue from myrrh; and it is now less employed than formerly. Some late writers, however, and particularly Dr Simmons, in this Treatise on Consumptions, have bestowed very high encomiums on it even in cases of tuberculous phthisis; and although it can by no means be represented as a remedy much to be depended on, yet there is reason to believe that it has been serviceable in some cases.

Rectified spirit extracts the fine aromatic flavour and bitterness of this drug, but does not elevate any thing of either in evaporation: the gummy substance left by this menstruum has a disagreeable taste, with scarcely any of the peculiar flavour of the myrrh; this part dissolves in water, except some impurities which remain. In distillation with water, a considerable quantity of a ponderous essential oil arises resembling in flavour the original drug. Myrrh is the basis of an officinal tincture. It enters the *pillule ex aloë et myrrha*, the *pillule gummi*, and *pillule rhei compositæ*, and some other formulæ.

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But for obtaining its full effects, it must be given in doses of half a drachm or upwards: and it is thought to be advantageously united with a proportion of nitre, cream of tartar, or some other refrigerant salt.

MYRTUS [Brun.] *Bacca.*

Myrtus communis Lin.

Myrtle; the berries.

This is an evergreen shrub, growing in Italy, and cultivated in our botanic gardens. The leaves and berries have been sometimes used as astringents, but are not at present regarded.

NAPUS [Brun.] *Semen.*

Brassica Napus Lin.

Sweet navew, or navew gentle; the seeds.

This is a sort of turnip, sown in some of our gardens for culinary use: the roots are warmer than the common turnip. The seeds have a bitterish taste, accompanied with a faint aromatic flavour: abundance of virtues have been ascribed to them, as attenuating, detergent, alexipharmic, and others, but at present they are scarcely employed in medicine.

NARDUS INDICA [Brun.]

Radix.

Andropogon Nardus Lin.

Indian nard; or spikenard.

This root, brought from the East Indies, is a congeries of small fibres issuing from one head, and matted close together, so as to form a bunch about the size of the finger, with some small strings at the opposite end of the head. The matted fibres (which are the parts chosen for medicinal purposes) are supported by some to be the head or spike of the plant, by others the root: they seem rather to be

the remains of the withered stalks, or the ribs of the leaves: sometimes entire leaves and pieces of stalks are found among them: we likewise now and then meet with a number of these bunches issuing from one root.

Spikenard has a warm, pungent, bitterish taste; and a strong, not very agreeable smell. It is stomachic and carminative; and said to be alexipharmic, diuretic, and emmenagogue; but at present it is very little employed.

NASTURTIIUM-AQUATICUM [Lond. Ed.] *Herba recens.*

Sisymbrium Nasturtium Lin.

Water-crefles; the fresh herb.

This plant grows wild in rivulets, and the clearer standing waters; its leaves remain green all the year, but are in greatest perfection in the spring. They have a quick pungent smell (when rubbed between the fingers), and an acrid taste. As to their virtues, they are among the milder aperient antiscorbutics Hoffman had an high opinion of this plant, and recommends it as of singular efficacy; the expressed juice which contains the peculiar taste and pungency of the herb, may be taken in doses of an ounce or two, and continued for a considerable time. The juice is an ingredient in the *Succus cochlearie compositus* of the shops.

NATRUM. See BARILLA.

NEPETA [Brun] *Folia.*

Nepeta cataria Lin.

Catmint; the leaves.

This plant is commonly cultivated in our gardens, and is sometimes also found growing wild in hedges and on dry banks. It is a moderately aromatic plant, of

a strong smell, resembling a mixture of mint and penny-royal; of the virtues of which it likewise participates.

NEPHRITICUM LIGNUM

[Brun.]

Guilandina Moringa Lin.

Nephritic wood.

This is an America wood, brought to us in large, compact, ponderous pieces, without knots, of a whitish or pale yellow colour on the outside, and dark coloured, or reddish within; the bark is usually rejected. This wood imparts to water or rectified spirit a deep tincture: appearing, when placed between the eye and the light of a golden colour: in other situations, blue; pieces of another wood are sometimes mixed with it, which give only a yellow colour to water. The nephritic wood has scarcely any smell, and very little taste. It stands recommended in difficulty of urine, nephritic complaints, and all disorders of the kidneys and urinary passages; and is said to have this peculiar advantage, that it does not, like the warmer diuretics, heat or offend the parts. Practitioners, however, have not found these virtues warranted by experience.

NICOTIANA [Lond. Edin.]

Folium.

Nicotiana Tabacum Lin.

Tobacco; the leaves.

This plant was first brought into Europe about the year 1560, from the island Tobago in America; and is now sometimes cultivated for medicinal use in our gardens: but is generally imported from America in large quantities. The leaves are about two feet long, of a pale green colour while fresh,

and when carefully dried of a lively yellowish cast. They have a strong, disagreeable smell, like that of the narcotic plants, and a very acrid burning taste. Taken internally, they prove virulently cathartic and emetic, occasioning almost intolerable cardialgic anxieties. By boiling in water, their virulence is abated, and at length destroyed: an extract made by long coction is recommended, by Stahl and other German physicians, as a safe and most effectual aperient, expectorant, detergent, &c. but the medicine, which is extremely precarious and uncertain, has never come into any esteem among us. Of late, however, tobacco, under the form of a vinous or watery infusion, and taken in such small doses as to produce little effect from its action on the stomach, has been recommended to the attention of practitioners by Dr Fowler. He has found it to be a very useful and powerful diuretic, and has published many cases of dropsy and dysury, in which its employment has been attended with the best effects; and these good effects have been confirmed by the observations of other practitioners.

Tobacco is sometimes used externally in ointments, for destroying cutaneous insects, cleansing old ulcers, &c. Beaten into a mash with vinegar or brandy it has sometimes proved serviceable in removing hard tumours of the hypocondria; an account is given in the Edinburgh Essays, of two cases of this kind cured by it.

Injectons by the anus of the smoke or decoction have been used with advantage in cases of obstinate constipation threatening ileus, of incarcerated hernia, of ascarides,

des, of spasmodic asthma, and of persons apparently dead from drowning or other sudden causes. It has been used internally in form of syrup, conserve, and infusion, in cases of worms, epilepsy, amenorrhœa, asthma, &c. but it is certainly too active to be thus ventured on. An infusion of its ashes, recommended in dropsy, is not probably different from other vegetable lixivia, that contain a quantity of alkali.

There is another sort of tobacco found wild on dunghills in several parts of England: *Nicotiana glauca* of Lin. It seems to agree in quality with the hyoscyamus formerly mentioned, though, as Dale informs us, often substituted in our markets for the true tobacco: from which it may be distinguished by the leaves being much smaller, and the flowers not reddish as those of the official sort, but of a yellowish green colour.

NITRUM. *Kali nitratum* [*Lond.*] *Lixiva nitrata* [*Edin.*]

Nitre.

Nitre, or saltpetre, is a salt extracted in Persia and the East Indies from certain earths; and artificially produced, in some parts of Europe from animal and vegetable matters rotted together, with the addition of lime and ashes, and exposed for a length of time to the air; without the access of which, nitre is never generated: the salt extracted from the earth, &c. by means of water, is purified by colature and crystallisation.

Pure nitre dissolves in about six times its weight of water, and concretes again when the water is evaporated into colourless transparent crystals; their figure is that

of a hexagonal prism, terminated by sloping plates. It readily melts in the fire; and, in contact with fuel, deflagrates with a bright flame, and considerable noise; after the detonation is over, a large quantity of alkaline salt is found remaining. The taste of nitre is sharp, penetrating, and bitterish, accompanied with a certain sensation of coldness.

Nitre is a medicine celebrated in many disorders. Besides the aperient quality of neutral salts in general, it has a manifestly cooling one, by which it quenches thirst, and abates febrile heats; promotes urine; sometimes gently loosens the belly; but in cold phlegmatic habits, very rarely has this effect, though given in large doses: alvine fluxes, proceeding from too great acrimony of the bile or inflammation of the intestines, are suppressed by it: in choleric and febrile disorders, it generally excites sweat; but in malignant cases, where the pulse is low, and the strength lost, it retards this salutary evacuation.

The usual dose of this medicine is from two or three grains to a scruple; though it may be given with great safety, and generally to better advantage, in larger quantities: the only inconvenience is its not being apt to sit easy on the stomach. Some have affirmed, that this salt loses half its weight of aqueous moisture by fusion, and consequently that one part of melted nitre is equivalent to two of the crystals: but it did not appear, on several careful trials, to lose so much as one twentieth of its weight. The only official preparation of nitre is the troches. It is employed likewise in operations on metallic bodies, for promoting their calcination.

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NUX MOSCHATA. See

MYRISTIC.

NUX PISTACHIA [Gen.]

Pistachia vera Lin.

Pistachio nut.

This a moderately large nut, containing a kernel of a pale greenish colour, covered with a reddish skin. The tree which produces it grows spontaneously in Persia, Arabia, and several islands of the Archipelago. Pistachio nuts have a pleasant, sweet, unctuous taste, resembling that of almonds. They are ranked among the analeptics; and are much esteemed in certain weaknesses, and in emaciated habits.

NUX VOMICA [Succ.]

Strychnos nux vomica Lin.

Nux vomica.

This is the produce of a tree growing in the East Indies, where it is said to be used as a specific against the bite of a species of water-snake. It is considerably bitter and deleterious; but has been used in doses of from five to ten grains twice a day in intermittents, particularly obstinate quartans, and in contagious dysentery. The *Strychnos Ignatii* is a tree of the same kind, producing gourd-like fruit, the seeds of which are improperly called St Ignatius's beans. These, and also the woods or roots, of some such trees, called lignum colubrinum or snakewood, are very narcotic bitters like the

NUX VOMICA.

Nymphaea alba Lin.

Nymphaea alba Lin.

White water lily; the root and flowers.

This grows in slow running rivers and large lakes, flowering usually in June. The roots and flowers

have a rough, bitterish, glutinous, taste (the flowers are the least rough) and when fresh they have a disagreeable smell, which is in great measure lost by drying: they are recommended in alvine fluxes, glects, and the like. The roots are supposed to be in a high degree narcotic, but on no very good foundation. Lindestolpe informs us, that in some parts of Sweden they were in times of scarcity used as food, and did not prove unwholesome.

OCHRA [Brun.]

Yellow ochre: a soft friable ore of iron, of a yellow colour dug in several parts of England. It possesses the virtues of the calces of iron and hematites; but in so low a degree, that the shops have deservedly rejected it; its principal use is as a pigment.

OCULI CANCRORUM. See CANCER.

GENANTHE, *Radix, folia.*

Oenanthe crocata Lin.

Hemlock dropwort.

This is a large umbelliferous plant growing in ditches and other moist places.

This virulent plant has been long known as a most dangerous poison. Its roots or leaves eaten by mistake have often proved fatal; occasioning violent sickness and vomiting, rigors, convulsions, delirium, and other terrible affections of the nervous system.

Notwithstanding these violent effects which it produces when taken in large quantities, its juice in the dose of a drachm or two twice a day has been found singularly efficacious in removing inveterate scorbutic complaints. It has been a good deal employed at

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Edinburgh, and in some cases with apparent advantage. The late Dr Hope thought that in many cases he found an infusion of the leaves highly useful in promoting the menstrual discharge. It does not seem to have yet found its way into any of our modern pharmacopœias; but it may be justly considered as meriting farther attention.

OLIBANUM [Lond. Ed.]

Gummi resina.

Juniperus Lycia Lin.

Olibanum.

This gummi resinous substance is brought from Turkey and the East-Indies, usually in drops or tears, like those of mastich, but larger, of a pale yellowish and sometimes reddish colour, a moderately warm pungent taste, and a strong, not very agreeable smell. This drug has received many different appellations according to its different appearances: the single tears are called simply *olibanum*, or *thus*: when two are joined together, they have been called *thus masculum*, and when two were very large, *thus femininum*: sometimes four or five, about the bigness of filberts, are found adhering to a piece of bark of the tree from which they exuded; these have been named *thus corticosum*; the finer powder which rubs off from the tears in the carriage, *mica thus*; and the coarser powder, *manna thus*. This drug is not however, in any of its states, what is now called *thus* or *frankincense* in the shops.

Olibanum consists of about equal parts of gummy and resinous matters; the first soluble in water, the other in rectified spirit. With regard to its virtues abundance have been attributed to it, particularly in disorders of the

head and breast, in hæmoptoe, and in alvine and uterine fluxes; but its real effects in these cases are far from answering the promises of the recommenders. Riturius is said to have had large experience of the good effects of it in pleuritis, especially epidemic ones: he directs a scooped apple to be filled with a drachm of olibanum, then covered and roasted under the ashes; this is to be taken for a dose, three ounces of carduus water drank after it, and the patient covered up warm in bed: in a short time, he says, either a plentiful sweat, or a gentle diarrhœa ensues, which carries off the disease.

OLIVA [Lond. Ed.] *Fruâs Oleum expressum.*

Olea europea Lin.

Olive: the expressed oil of the fruit.

This tree grows in the southern parts of France, in Spain, Italy, and other warm countries; with us it is usually kept in the green-houses of the curious. Olives have an acrid, bitter, extremely disagreeable taste: pickled, as we receive them from abroad, they prove less disagreeable; the Lucca olives, which are smaller than the others, have the weakest taste; the Spanish, or larger, the strongest: the Provence, which are of a middling size, are generally the most esteemed.

The oil obtained from this fruit has no particular taste or smell, and does not greatly differ in quality from oil of almonds. Authors make mention of two sorts of this oil, one expressed from the olives when fully ripe, which is our common olive oil: the other before the fruit has grown ripe; this is called *oleum immaturum*,

Immaturum, and *amphacinum*. Nothing is met with in the shops under this name; and Lemery affirms, that there is no such oil; unripe olives, yielding only a viscid juice to the press. From the ripe fruit, two or three sorts are obtained, differing in degree of purity: the purest runs by light pressure; the remaining magma, heated and pressed more strongly, yields an inferior sort, with some dregs at the bottom, called *amurca*. All these oils contain a considerable portion of aqueous moisture, and a mucilaginous substance; which subject them to run into a purid state: to prevent this, the preparers add some sea-salt, which imbibing the aqueous and mucilaginous parts, sinks with them to the bottom; by this means the oil becomes more homogeneous, and consequently less susceptible of alteration. In its passage to us, some of the salt, thrown up from the bottom by the shaking of the vessel, is sometimes mixed with, and detained in the oil, which, in our colder climate, becomes too thick to suffer it freely to subside; and hence this oil is sometimes found to have a manifest saline taste. Olive oil is used in plasters and ointments and other compositions for external uses: it is also used internally in hoarseness, coughs, &c. either mixed with water into the form of an emulsion by means of alkalies, or mixed with syrups or conserves into linctuses.

OPIUM [*Lond. Ed.*] *Succus impassutus*.

Papaver somniferum Lin.

Opium.

This juice has not yet been collected in quantity in Europe. Egypt, Persia, and some other

provinces of Asia, have hitherto supplied us with this commodity: in those countries, large quantities of poppies are cultivated for this purpose. The opium prepared about Thebes in Egypt, hence named Thebaic opium, has been usually esteemed the best; but this is not now distinguished from that collected in other places. This juice is brought to us in cakes or loaves, covered with leaves, and other vegetable matters, to prevent their sticking together: it is of a solid consistence, yet somewhat soft and tenacious, of a dark reddish brown colour in the mass, and when reduced into powder, yellow; of a faint disagreeable smell and a bitterish taste, accompanied with a pungent heat and acrimony.

In the province of Bahar in the East Indies, the poppy seeds are sown in October or November at about eight inches distance; and are well watered till the plants are about half a foot high, when a compost of nitrous earth, dung, and ashes, is spread over the areas; and a little before the flowers appear, they are again watered profusely till the capsules are half grown; and then the opium is collected; for when fully ripe, they yield little juice. Two longitudinal incisions, from below upwards, without penetrating the cavity, are made at sunset for three or four successive evenings. In the morning the juice is scraped off with an iron scoop, and worked in an earthen pot in the sun's heat till it be of a proper consistence to be formed into thick cakes of about four pounds weight, which are covered over with the leaves of poppy, and dried. It is said to be adulterated with various unknown substances, with the extract

extract of the poppy plant procured by boiling. and even with cow dung. It is purified by reducing it to a pulp with hot water and strongly pressing it while hot, through a linen cloth from its impurities. It is then evaporated by a water-bath or other gentle heat to its original consistence. This extract is found to contain a resin, a kind of essential oil, a principle of odour, an essential salt, and a sopy extract.

Opium has a brownish colour; a strong peculiar smell; a taste at first nauseous and bitter, but soon becoming acrid, with a slight warmth: and it appears to have some astringency, as a watery tincture of it forms an ink with a chalybeate solution.

The external and internal effects of opium appear to be various in different constitutions, and in the same at different times. By some, when applied to the tongue, the nose, the eye, or any part deprived of skin, it has been said to stimulate, and to induce, especially in the eye, a slight degree of redness. But if this effect takes place, it is at the utmost extremely inconsiderable, particularly when compared with the effect of volatile alkali, ardent spirit, or a variety of other articles applied to the same organ: And there can be no doubt, that in a very short time the sensibility of the part to which it is applied, even without the slightest mark of preceding stimulus or inflammation, is very considerably diminished. Some allege, that when applied, to the skin, it allays pain and spasm, procures sleep, and produces all the other salutary, or dangerous, effects which result from its internal use; while others allege, that

thus applied it has little or no effect whatever.

This variety probably arises from differences in the condition of the subcutaneous nerves, and of the sensibility of the surface, being more or less defended. But there is no doubt, that when mixed with caustic, it diminishes the pain, which would otherwise ensue, probably by deadening the sensibility of the part.

It sometimes allays the pain in a serious tooth; and a watery solution of it has been used in various ulcers, certain ophthalmia, and virulent gonorrhoea, when pain and inflammation have given very great distress.

Opium, when taken into the stomach in a sufficient dose, gives rise to a pleasant serenity of mind, in general proceeding to a certain degree of languor and drowsiness. The action of the sanguiferous system is diminished, the pulse becoming, for the most part, softer, fuller, and slower than it was before. A swelling of the subcutaneous veins, and sweating, often takes place, both probably the consequences of a diminution of resistance at the surface, from a diminution of muscular action; and accordingly opium diminishes those discharges which depend on muscular action, as is particularly exemplified in its effect of binding the belly. Opium taken into the stomach in a larger dose, gives rise to confusion of head and vertigo. The power of all stimulating causes, as making impressions on the body, is diminished; and even at times, and in situations when a person would naturally be awake, sleep is irresistibly induced. In still larger doses, it acts in the same manner as the narcotic poisons, giving

giving rise to vertigo, headach, tremors, delirium, and convulsions: and these terminating in a state of stupor, from which the person cannot be roused. This stupor is accompanied with slowness of the pulse, and with stertor in breathing, and the scene is terminated in death, attended with the same appearances as take place in an apoplexy.

From these effects of opium in a state of health, it is not wonderful that recourse should have been had to it in disease, as mitigating pain, inducing sleep, allaying inordinate action, and diminishing morbid sensibility. That these effects result from it, is confirmed by the daily experience of every observer; and as answering one or other of these intentions, most, if not all, of the good consequences derived from it in actual practice are to be explained. If, therefore, by a sedative medicine we mean an article capable of allaying, assuaging, mitigating, and composing, no substance can have a better title to the appellation of sedative than opium.

Some practitioners are averse to its use where an active inflammation takes place; but others have-recourse to it in such cases, even at an early period, especially after blood-letting; and where such affections are attended not only with pain and spasm, but with watchfulness and cough, it is often productive of the greatest benefit. Opium combined with calomel has of late been extensively employed in every form of active inflammation, and with the greatest success. It is found also to be of very great service in allaying the pain and preventing the symptomatic fever liable to be induced by wounds, frac-

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tures, burns, or similar accidents.

In intermittents, it is said to have been used with good effect before the fit, in the cold stage, in the hot stage, and during the interval. Given even in the hot stage, it has been observed to allay the heat, thirst, head-ach, and delirium, to induce sweat and sleep, to cure the disease with the less bark, and without leaving abdominal obstructions or dropsy.

It is often of very great service in fevers of the typhoid type, when patients are distressed with watchfulness or diarrhoea. But where these or similar circumstances do not indicate its use, it is often distressing to patients by augmenting thirst and constipation.

In small-pox, when the convulsions before eruption are frequent and considerable, opium is liberally used. It is likewise given from the fifth day onwards; and is found to allay the pain of suppuration, to promote the ptyalism, and to be otherwise useful.

In dysentery, after the use of gentle laxatives, or along with them, opium, independently of any effect it may have on the fever, is of consequence in allaying the tormina and tenesmus, and in obviating that laxity of bowels which is so frequently a relict of that disease.

In diarrhoea, the disease itself generally carries off any acrimony that may be a cause, and then opium is used with great effect. Even in the worst symptomatic cases it seldom fails to alleviate.

In cholera and pyrosis, it is almost the only thing trusted to.

In colic, it is employed with lax-

laxatives; and no doubt often prevents ileus and inflammation, by relieving the spasm. Even in ileus and in incarcerated hernia, it is often found to allay the vomiting, the spasms, the pain, and sometimes to diminish the inflammation, and prevent the gangrene of the strangulated gut.

It is given to allay pain and to favour the descent of calculi through the ureters, and to relieve the symptoms proceeding from spasm in jaundice and dysuria. It is of acknowledged use in the different species of tetanus; affords relief to the various spasmodic symptoms of dyspepsia, hysteria, hypochondriasis, asthma, rabies canina, &c. and has been found useful in some kinds of epilepsy.

Of late, in doses gradually increased to five grains, three, four, or even six times a day, it has been used in syphilis; and some instances are recorded, in which it would seem that by this remedy alone, a complete cure has been obtained. In other instances, however, after the fairest trial for a considerable length of time, it has been found ineffectual; and on the whole, it seems rather to be useful in combating symptoms, and in counteracting the effects resulting from the improper use of mercury, than in overcoming the venereal virus.

It is found useful in certain cases of threatened abortion and lingering delivery, in convulsions during parturition, and in the after pains and excessive flooding.

The only form perhaps necessary for opium is that of pill; and as it is so soluble in every menstruum, there seems the less occasion for the addition of either gum or soap. This form is more

apt to fit on the stomach than any liquid form, but requires rather more time to produce its effects. The administration of opium to the unaccustomed is sometimes very difficult. The requisite quantity of opium is wonderfully different in different persons, and in different states of the same person.

A quarter of a grain will in one adult produce effects which ten times that quantity will not do in another; and a dose that might prove fatal in cholera or colic, would not be perceptible in many cases of tetanus or mania. The lowest fatal dose to the unaccustomed, as mentioned by authors, seems to be four grains; but even this is a dangerous dose. When given in too small a dose, it is apt to produce disturbed sleep, and other disagreeable consequences; and in some cases it seems impossible to be made to agree in any dose or form. Often, on the other hand, from a small dose, sound sleep, and alleviation of pain will be produced, while a large one gives rise to vertigo and delirium. Some physicians prefer the repetition of small doses, others the giving of a full dose at once. In some cases it seems not to have its proper effect till after a considerable time. The operation of a moderate dose generally lasts about eight hours from the time of taking it.

Pure opium is partially soluble in water and in rectified spirit, and totally in proof spirit, wine, or vinegar. Water rubbed with opium, and decanted repeatedly till it come off colourless, yields, on gentle evaporation, an extract which some practitioners use and recommend as one of the best preparations of this substance, and which requires to be given in

in double the dose of common opium.

It is said, that alkalies diminish its soporific effects; that the fixed render it diuretic, the volatile determine it to the skin: and that acids destroy its activity almost entirely; when however it is conjoined with acids, particularly the diluted vitriolic acid, it often fits easily on the stomach, when it would not otherwise be retained, and afterwards produces all its sedative effects.

The chief official preparations of opium are, the *Opium purificatum*, *Pilule ex opio*, *Pulvis opiatum*, *Tinctura opii*, *Tinctura opii ammoniata*. Besides these it enters a great variety of different compositions, as the *Pulvis Ipecacuanhae compositus*, *Linimentum Opiatum*, *Eleæuarium catichu*, &c.

The occasional bad effects of opium may result from the same power by which, in other states of the system, it proves beneficial. The methods, therefore, proposed of correcting these by roasting, fermentation, long continued digestion, repeated solution and distillations, have not succeeded.

OPOPANAX [Lond.] Gummi resina.

Passinaca Opopanax Lin.
Opopanax.

This is a concrete gummy resinous juice, obtained from the roots of an umbelliferous plant, which grows spontaneously in the warmer countries, and bears the colds of this. The juice is brought from Turkey and the East Indies, sometimes in round drops or tears, but more commonly in irregular lumps, of a reddish yellow colour on the outside with specks of white, inwardly of a paler colour,

and frequently variegated with large white pieces. It has a peculiar strong smell, and a bitter, acrid, somewhat nauseous taste. Boerhaave frequently employed it, along with ammoniacum and galbanum, in hypochondriacal disorders, obstructions of the abdominal viscera, and suppressions of the menstrual evacuations: with these intentions it is an useful ingredient in the *Pilule gummose* and compound powder of myrrh of the London pharmacopœia, but it is not employed in any composition of the Edinburgh; nor is it in the Edinburgh materia medica. It may be given by itself in the dose of a scruple, or half a drachm: a whole drachm proves, in many constitutions, gently purgative.

ORCHIS. See SATYRION.

ORIGANUM [Lond.] Herba.

Origanum vulgare Lin.

Wild marjoram; the herb.

This is met with upon dry chalky hills and in gravelly soils, in several parts of England. It has an agreeable smell, and a pungent taste, warmer than that of the garden marjoram; and much resembling thyme, which it seems to agree with in virtue. An essential oil distilled from it is kept in the shops.

There is another sort of *origanum* called *Creticum*, whose flowers, or rather flowery tops, are sometimes brought to us from Candy: these have an agreeable aromatic flavour, somewhat stronger than the common sort.

ORYZA [Brun.] Semen.

Oryza sativa Lin.

Rice; the grain.

Rice is the product of many different countries, particularly of the

the East Indies: but, as used in Britain, it is brought chiefly from Carolina, where the plant is cultivated in larger quantities. It is sufficiently nutritious, and affords an useful food in diarrhoeas, dysenteries, and other disorders.

OSTREA [Lond.] Testa.

Ostrea edulis Lin.

Oyster shell.

The shells of the oyster, like those of other similar fish, are calcareous earth with some animal gluten. They possess no medicinal virtue superior to common limestone and chalk; and the only reason that can be assigned for using them is, that they afford a quicklime which is perfectly free from any taint of metallic or other mineral substance.

OVIS [Lond.] Scrum.

SEVUM OVILLUM [Edin.]

Ovis Aries Lin.

Mutton suet.

This article is used merely for the sake of giving a proper consistency to ointments, liniments, and plasters, and as a basis for these kind of compositions. Like other animal fats, it is lubricating and relaxing; and is sometimes employed for that purpose, being externally applied to take off the rigidity of certain parts, or to promote perspiration by relaxing the skin.

OVUM [Lond.]

Ovum gallinaceum Lin.

Hens egg.

Both the yolk and the white of eggs are used to give a proper form to different medicines, and are for that purpose employed in some of the official preparations, as in the *Coagulum aluminis*. But they do not seem to possess any medi-

cal virtues, unless as an article of diet; and used with that intention they are highly nutritious. Egg-shells when burnt become quicklime, and as such they have sometimes been used in medicine; but they differ in no respect from the other calcareous earths.

OXALIS. See ACETOZA.

OXYACANTHA GALENI.

See BERBERIS.

OXYLAPATHUM. See

HYDROLAPATHUM.

PÆONIA [Succ.] Radix, semen.

Pæonia officinalis Lin.

Male and female peony; the root and seed.

These plants are cultivated in our gardens on account of the beauty of their flowers; the female which is the largest and most elegant, and for this reason the most common, is the only one with which the shops are supplied. In quality they are scarcely sensibly different; and hence they may be taken promiscuously. The roots and seeds of peony have, when recent, an unpleasant scent, approaching to that of the narcotic plants, and a somewhat glutinous subacid taste, with a slight degree of bitterness and astringency; the leaves also discover an astringent quality, both to the taste and by changing chalybeate solutions to a purple colour: the flowers have little taste, and a very faint, not agreeable smell. The parts which have been chiefly used for medicinal purposes are the roots and seeds. They are considered as emollient, corroborant, and slightly anodyne; and supposed to be of service in some kinds of

of obstructions, erosions of the viscera, heat of urine, pains in the kidneys, &c. The virtue they are chiefly celebrated for, is that of curing spasmodic and epileptic complaints; which many have been absurd enough to believe that the roots and seeds of this plant would do by being only worn about the neck.

PALMA [*Ed.*] *Frustrus oleum*
expressum.

Palm-tree; the expressed oil of the fruit.

This oil is obtained from the kernels of the fruit of a species of palm tree, which is a native of the coast of Guinea and Cape Verd islands: from these places it has been transplanted into Jamaica and Barbadoes. The oil, as brought to us, is about the consistence of an ointment, and of an orange colour; it has a strong, agreeable smell, but very little taste: by long keeping it loses its high colour, and becomes white, when it ought to be rejected as no longer fit for use. The inhabitants of the Guinea coast are said to make this oil part of their food, and to employ it for the same purposes as we do butter. With us it is rarely given inwardly, and is used only in some external applications for pains, cramps, sprains, and the like. The common people apply it for the cure of chilblains, and when early used it is not without success.

PAPAYER ALBUM [*Lond. Ed.*] *Capula.*

Papaver somniferum Lin.

The white poppy; the seed-pod.

Poppy heads, boiled in water impart to the menstruum their narcotic juice. The liquor strongly

pressed out, suffered to settle, clarified with white of eggs, and evaporated to a due consistence, yields about one fifth, or one-sixth the weight of the heads, of extract. This possesses the virtues of opium; but requires to be given in double its dose to answer the same intention, which it is said to perform without occasioning a nausea and giddiness, the usual consequences of the other. A strong decoction of the heads, mixed with as much sugar as is sufficient to reduce it into the consistence of a syrup, becomes fit for keeping in a liquid form: and is the only official preparation of the poppy. Both these preparations are very useful ones, though liable to variation in point of strength; nor does this inconvenience seem avoidable by any care in the prescriber or the operator: since the poppy heads themselves, according to the degree of maturity and the soil and season of which they are the produce, contain different proportions of the narcotic matter to the other juices of the plant.

The seeds of the poppy are by many reckoned soporific: Juncker says, they have the same quality with those of the hyoscyamus, and Herman looks upon them as a good substitute for opium; raised probably by an observation which holds in many plants, that the seeds are more efficacious than the vessels in which they are contained. The seeds of the poppy have nothing of the narcotic juice, which is lodged in their covering and in the stalks: an oil expressed from them has been used for the same purposes as olive oil; and the seeds themselves have been taken as food: their taste is sweetish and farinaceous.

PAPAYER ERRATICUM

[*Lond*] *Flos*.*Papaver Rheas* *Lin.*

Red poppy; the flower.

The flowers of this plant yield upon expression a deep red juice, and impart the same colour by infusion to aqueous liquors. A syrup of them is kept in the shops; this is valued chiefly for its colour; though some expect from it a slightly anodyne virtue.

PAREIRA BRAVA [*Lond.*]*Cissampelos Pareira* *Lin.*

Pareira brava; the root.

This is the root of an American plant brought to us from Brazil, in pieces of different sizes, some no bigger than one's finger, others as large as a child's arm; it is crooked, and variously wrinkled on the surface; outwardly of a dark colour, internally of a dull yellowish, and interwoven with woody fibres; so that, upon a transverse section, a number of concentric circles appear, crossed with fibres, which run from the centre to the circumference: it has no smell; the taste is a little bitterish, blended with a sweetness like that of liquorice. This root is highly extolled by the Brazilians and Portuguese, in a variety of diseases, particularly against suppressions of urine, nephritic pains, and the calculus. In the two first, Geoffroy says he has given it with good success; and that the patient was almost instantly relieved by it, a copious discharge of urine succeeding. He likewise observed large quantities of gravel and small stones voided after its use: this effect he attributes not to any lithontriptic power, but to its dissolving the viscid mucus by which the fabulous mat-

ter had been detained. He likewise relates, that he has had frequent experience of the good effects of this root in detaching and healing ulcers of the kidneys and bladder, where the urine came away purulent and mucous, and could not be voided at all without extreme pain: by the use of the *pareira*, the urine soon became clear, of a due consistence, and was evacuated freely: and by joining to this medicine balsam of Copaiba, the ulcer perfectly healed. In humoral asthma, where the lungs are stuffed up, and the patient almost suffocated by thick phlegm, an infusion of *pareira*, after many other medicines had proved ineffectual, occasioned a plentiful expectoration, and soon completed a cure: in the jaundice proceeding from thick bile, it did excellent service: but in another isæterical case, where the liver was swelled and hard, this medicine did no good. His dose of the root in substance is from twelve grains to half a drachm; in decoction to two or three drachms. These good effects, however, have not been confirmed by later experience; and at present it is so little used, that the Edinburgh college have given it no place in their pharmacopœia.

PARIETARIA [*Lond. Ed.*]*Herba.**Parietaria officinalis* *Lin.*

Pillitory of the wall; the herb.

This is a small plant growing upon old walls; of an herbaceous sub saline taste, without any smell. It is an emollient, and with this intention is occasionally used. The expressed juice has been given in the dose of three ounces as a diuretic.

PAS-

PASTINACA [Succ.] Semen.

Pastinaca sativa Lin.

Raspings; the seeds.

The roots of the parsnep are used as food, and prove sufficiently nutritious. The seeds are slightly aromatic; and from that circumstance are sometimes, although rarely, employed in medicine.

PENTAPHYLLUM [Lend.]

*Radix.**Potentilla reptans* Lin.

Cinquefoil; the roots.

This grows plentifully in hedges and by the road sides. The root is moderately astringent; and as such is sometimes given internally in diarrhoeas and other fluxes, and employed in gargarisms for strengthening the gums, &c. The cortical part of the root may be taken, in substance, to the quantity of a drachm; the internal part is considerably weaker, and requires to be given in double the dose to produce the same effect; but as we possess many more powerful astringents, the cinquefoil is but little used.

PERSICARIA [Succ.] Herba.

Polygonum Hydropiper Lin.

Water pepper; the leaves.

This species of polygonum is remarkable for its pungent, biting, pepper like taste. Its virtues are those of an acrid stimulating medicine; in phlegmatic habits, it promotes the urinary discharge, and has frequently done good service in scorbutic complaints. The fresh leaves are sometimes applied externally for cleansing old fistulous ulcers, and consuming fungous flesh; for these purposes they are said to be employed by the farriers, among whom they have been principally used.

PERSICA [Bruis.] Flor, nuclei.

Amygdalus persica Lin.

The peach-tree; its flowers and kernels.

Peach flowers have an agreeable smell, and a bitterish taste: distilled, without any addition, by the heat of a water-bath, they yield one sixth of their weight, or more, of a whitish liquor, which communicates to a large quantity of other liquids a flavour like that of the kernels of fruits. An infusion in water of half an ounce of the fresh gathered flowers, or a drachm of them when dried, sweetened with sugar, proves for children an useful laxative and anthelmintic: the leaves of the tree are, with this intention, somewhat more efficacious, though less agreeable. The fruit has the same quality with the other sweet fruits, that of abating heat, quenching thirst, and gently loosening the belly.

PETASITIS [Ross.] Radix.

Tussilago Petasitis Lin.

Butterbur; the root.

This grows wild, by the sides of rivers and in moist meadows: it sends forth short scaly stalks in the spring, bearing spikes of purple flowers; after this the leaves appear, which are very large and hollowed about the middle, so as to resemble a bonnet, or what the Greeks called *πτέρας*, whence the name of the plant. The roots have a strong smell; a bitterish, aromatic, not very agreeable, taste; they have been given in the dose of a drachm or more as an aromatic, and likewise as an aperient and deobstruent; these virtues, however, they possess in so low a degree, as to have lost their reputation in the shops.

PET-

PETROLEUM [*Lond*]
PETROLEUM BARBADENSE [*Edin.*]

Bitumen petroleum.

Rock oil, Barbadoes tar.

This is a general name for sundry liquid bitumens, or mineral oils, which spontaneously exude from the earth, or from clefts of rocks. These oils are found in almost all countries, but in greatest quantities in the warmer ones: some are met with in different parts of England; and many of our common bituminous minerals, as pit coal, &c. afford, on distillation, oils not greatly different from them.

The finest sort of this commodity comes from the duchy of Modena in Italy, where three different kinds are found; the best is almost as clear, fluid and transparent as water, of a highly penetrating, yet not disagreeable smell, somewhat like that of rectified oil of amber: the second sort is of a clear yellow colour, not so fluid as the former, less penetrating, and partaking more of the oil of amber smell; the third, or worst, is of a blackish red colour, of a thicker consistence, and more disagreeable than the two foregoing. The first of these is very rarely met with in the shops; the second, mixed with a little of the third and some subtle oil, is usually sent us instead of it. Petroleum readily catches fire, and, if pure, burns entirely away: distilled, it becomes somewhat more pellucid than before, a small quantity of yellowish matter remaining, and it greatly loses its natural smell: it unites with the essential oils of vegetables; but not at all with vinous spirits: the finer sorts are so light as to swim upon the most highly rectified spirit of wine.

Petroleum is at present very rarely employed as a medicine, though if the finer kinds could be procured genuine, they should seem to deserve some notice: they are more agreeable than the oil of amber, and milder than that of turpentine; of the virtues of both which they participate. They are principally recommended by authors for external purposes, against pains and aches, in paralytic complaints, and for preventing chilblains. For these intentions, some of the more common mineral oils have been used with good success: an oil extracted from a kind of fossil coal has been cried up among the common people, under the name of British oil, for rheumatic pains, &c. even this is often counterfeited by a small portion of oil of amber added to the common expressed oils.

The Barbadoes tar is thicker than most petroles, and nearly of the consistence of common tar. It is of a reddish black colour, a disagreeable smell, less pungent than the other sorts. This bitumen is found in several of the West-India islands, where it is esteemed by the inhabitants of great service as a sudorific, and in disorders of the breast and lungs; though in cases of this kind, attended with inflammation, it is certainly improper; they likewise apply it externally as a discutient, and for preventing paralytic disorders.

PETROSELINUM [*Lond. Ed.*] *Radix semen.*

Apium petroselinum Lin.

Parsley; the root and seed.

This plant is commonly cultivated for culinary purposes. The seeds have an aromatic flavour, and are occasionally used as carminatives,

natives, &c. The root is sometimes made an ingredient in apozoms and diet-drink : if liberally used, it is apt to occasion flatulencies ; and thus, by distending the viscera, produces a con- trary effect to that intended by it : the taste of this root is some- what sweetish, with a slight degree of warmth and aromatic flavour.

PIMENTO [*Lond.*] *Bacca.*

PIMENTA [*Ed.*] *bacca.*

Myrtus Pimenta Lin.

Pimento, or Jamaica pepper ; the berry.

The smell of this spice resem- bles a mixture of cinnamon, cloves, and nutmegs : its taste approaches to that of cloves, or a mixture of the three foregoing ; whence it has received the name of *all spice*. The shops have been for some time accustomed to employ this aromatic as a succedaneum for the more costly spices, and from them it has been introduced into our hospitals.

Pimento is now in our phar- macopœias the basis of a distilled wa- ter, a spirit, and an essential oil ; all of which are frequently em- ployed where aromatics are indi- cated.

PIMPINELLA [*Ed.*] *Radix.*

Pimpinella saxifraga Lin.

Burnet saxifrage ; the root.

Of this plant several varieties had formerly a place in our phar- macopœias : but all of them seem to be possessed of the same quali- ties, and to differ only in external appearance.

The roots of pimpinella have a grateful warm, very pungent taste, which is entirely extracted by rectified spirit : in distillation, the menstruum arises, leaving all that it had taken up from the root, uni-

ted into a pungent aromatic resin. This root promises, from its sensi- ble qualities, to be a medicine of considerable utility ; though little regarded in common practice. Stahl, Hoffman, and other German physicians, are extremely fond of it, and re- commend it as an emollient, stomachic, resolvent, detergent, diuretic, diaphoretic, and alexi- pharmic. They frequently gave it, and not without success, in scorbutic and cutaneous dis- orders, tumours and obstructions of the glands, and diseases pro- ceeding from a deficiency of the fluid secretions in general. Boer- haave directs its use in asthmatic and hydropic cases, where the strongest resolvents are indicated : the form he prefers is a watery infusion ; but the spirituous tinc- ture possesses the virtues of the root, in much greater perfection.

PIPER INDICUM [*Lond.*

Ed.] *Fruſtus.*

Capſicum annuum Lin.

Guinea-pepper, or capſicum ; the fruit.

This is an annual plant cultiva- ted in our gardens ; it ripens its red pods in September or October. The taste of capſicum is extremely pungent and acrimonious, setting the mouth as it were on fire. It is rarely used in medicine, being chiefly employed for culinary pur- poses. And there can be little doubt that it furnishes us with one of the purest and strongest stimulants which can be introduced into the stomach ; while, at the same time, it has nothing of the narcotic effect of ardent spirit. Its dose is six or eight grains in the form of pills, or from one to three drachms of tincture made by in- fusing half an ounce of it in a pound

pound of rectified spirit. Dr Adair has found it useful in a variety of cases, particularly in that morbid disposition which he calls the *cachexia Africana*, and which he considers as a most frequent and fatal predisposition to disease among the slaves. It has also been successfully employed in a species of cynanche maligna, which proved very fatal in the West Indies, resisting the use of Peruvian bark, wine, and the other remedies commonly employed.

A species of it, called in the West Indies *bird pepper*, is the basis of a powder brought from thence under the name of *Cayan pepper*.

PIPER LONGUM [Lond.
Ed.] *Fruſus*.

Piper longum Lin.

Long pepper.

Long pepper is the fruit of a plant growing in the East Indies. It is of a cylindrical figure, about an inch and a half long; the external surface appears composed of numerous minute grains placed round the fruit in a kind of spiral direction.

PIPER NIGRUM [Lond.
Ed.] *Bacca*.

Piper nigrum Lin.

Black-pepper; the berry.

Black pepper is the fruit of a plant growing in Java and Malabar, gathered probably before it be fully ripe, and exsiccated in the sun.

All the species of pepper have a pungent smell, and a very hot biting taste. The long fort, which is the hottest and strongest is most frequently used for medicinal purposes; the black, as being more grateful, for culinary

ones. The warmth and pungency of these spices reside chiefly in their resinous parts; and their aromatic odour in an essential oil. The genuine distilled oil smells strong of the pepper, but has very little acrimony; the remaining decoction, inspissated, yields an extract considerably pungent. A tincture made in rectified spirit is extremely hot and fiery; a few drops of it fet the mouth as it were in a flame.

PIX BURGUNDICA [Lond.
Ed.]

Pinus abies Lin.

Burgundy pitch.

This is of a solid consistence, yet somewhat soft, of a reddish brown colour, and not disagreeable in smell. Geoffroy relates, that it is composed of galipot (a solid white resin which separates from some of the *terebinthinae*, as they run from the tree) melted with common turpentine and a little of its distilled oil. Dale informs us, from the relation of a gentleman who saw the preparation of this commodity in Saxony, (from whence we are chiefly supplied with it,) that it is no more than the common turpentine boiled a little.

It is employed only externally. It was formerly an ingredient in several ointments and plasters, but from these it is now rejected; and at present it is used only by itself as a warm plaster. In some cases it excites even vesications; but in general it produces only redness of the part to which it is applied, with a slight degree of moisture exuding from it; and in consequence of these stimulating effects it is often serviceable in cases of coughs, rheumatisms. &c.

PIX

PIX LIQUIDA [*Lond. Ed.*]*Pinus sylvestris* Lin.

Tar.

This a thick black empyreumatic oil obtained from the roots of old pines by distillation. It differs from the native resinous juice of the trees, in having a disagreeable empyreumatic quality, and in containing a proportion of the saline and other juices united with the resinous and oily. By the mediation of these a part of the terebinthinate oil proves soluble in aqueous liquors, which extract little or nothing from the purer turpentine. In consequence of which, water digested with tar, becomes, by being impregnated with this hot and pungent oil, warm and stimulating. It has been said not only to raise the pulse, and quicken circulation, but to increase the vis vitæ; and at one time it was highly extolled as a remedy of the utmost utility, particularly in cold phlegmatic habits. It is now, however, very generally allowed, that it is by no means intitled to the high character which was once given of it, and at present it is very little employed.

PLANTAGO [*Ed.*] *Folia*.*Plantago major* Lin.

Common great plantain; the leaves.

The leaves are slightly astringent, and the seeds said to be so; and hence they stand recommended in hæmorrhagies and other cases where medicines of this kind are proper. The leaves bruised a little are the usual application of the common people to slight flesh wounds.

Plantain has been alleged to be a cure for the bite of the rattlesnake: but probably without much

foundation, although it is one of the principal ingredients in the remedy of the Negro Cæsar, for the discovery of which he received a considerable reward from the assembly of South Carolina.

PLUMBUM [*Lond.*]

Lead.

This is the heaviest of the metals, except gold, platina and quicksilver: it melts in a moderate heat, and if kept in fusion, is soon converted partly into fume, and partly into an ash coloured calx, *plumbum ustum*; this exposed to a stronger fire, in such a manner that the flame may play upon its surface, becomes first yellow, and afterwards of a deep red, *minium* or red lead: if in this process the fire be suddenly raised to a considerable height, the calx melts, assumes the appearance of oil, and on cooling forms a soft leafy substance of a yellowish or reddish colour, *Lithargyrus* or litharge; of these there are two kinds, one of a deep orange or reddish colour, formerly call *lithargyrus auri*, and the other of a paler colour called *Lithargyrus argenti*. The proper menstruum of this metal is aquafortis: the vegetable acids likewise dissolve it, but in very small quantity: a quart of distilled vinegar will not take up a drachm of lead; exposed to the steam of vinegar, it is by degrees corroded into a white powder, *cerussa*, which is considerably more easy of solution. The calces of lead dissolve by heat, in expressed oils; these mixtures are the basis of several official plasters and ointments. Crystals obtained from a solution of this metal in distilled vinegar, are called from their sweetish taste, *sugar of lead*; t

more properly *plumbum acetatum* or *cervissa acetata*.

Preparations of lead, given internally, are supposed to incrassate the fluids, abate inflammations, and restrain venereal desires. The acetated lead is a strong astringent, and has been used it is said, with good success in hæmorrhages, fluor albus, seminal gleets, &c. A tincture of it is recommended for the like purposes; and for checking immoderate sweats in phthisical cases; whence it has been called *tinctura antiphthisica*. The internal use of this metal is nevertheless dangerous, and ought never to be ventured on unless in desperate cases, after other medicines have been employed without effect: it often occasions violent colics; and though it should not prove immediately hurtful, its ill consequences are sure, though slow: tremors, spasms, or lingering tabes, too frequently follow.

The preparations of lead with vinegar are much used externally in inflammation, with great success; but of these we shall speak more particularly afterwards. See Part III. Chap. 14. on the preparations of lead.

POLYPODIUM [*Succ.*] *Radic.*

Polypodium vulgare Lin.

Polypody; the root.

Polypody is a capillary plant, growing on old walls, the trunks of decayed trees, &c. That found upon the oak is generally preferred, though not sensibly different from the others. The roots are long and slender, of a reddish brown colour on the outside, greenish within, and full of small tubercles, which resemble the feet of an insect; whence the name of the

plant; the taste of these roots is sweetish and nauseous.

Polypody has been employed in medicine for many ages; nevertheless its virtues yet remain to be determined. The ancients held it to be a powerful purger of melancholic humours; by degrees, it came to be esteemed an evacuator of humours in general; at length it was supposed only to gently loosen the belly; and afterwards even this quality was denied it; succeeding physicians declared it to be astringent; of this number is Boerhaave, who seems it moderately styptic and antiscorbutic.

POMPHOLYX [*Succ.*]

This is an impure calx of zinc, produced in the furnaces where copper is made into brads by calamine, the ore of zinc. It is found adhering to the covers of the crucibles, to the sides of the furnaces in the vents, &c. either in form of thin crusts, or of a light downy matter, generally of a pure white colour, though sometimes yellowish. See ZINCUM.

POPULUS [*Brun.*] *Gemma.*

Populus niger Lin.

The black poplar; its buds.

The black poplar is a large tree growing wild in watery places; it is easily raised, and of very quick growth. The young buds or rudiments of the leaves, which appear in the beginning of spring, are bound with a yellow, unctuous, odorous juice. They have hitherto been employed chiefly in an ointment, which received its name from them; though they are certainly capable of being applied to other purposes: a tincture of them made in rectified spirit yields when inspissated a fragrant resin superior

or to many of those brought from abroad. The black poplar, however, affords a much weaker flavoured resin, and in considerable quantity than another species known by the name of *Tacamahaca*, for an account of which, see *TACAMAHACA*.

PRUNELLA [Brun.] Herba.

Prunella vulgaris Lin.

Self-heal; the plant.

This plant grows wild in meadows and pasture grounds, and produces thick spikes of purplish flowers during the latter part of the summer. It has an herbaceous roughish taste: and hence stands recommended in hæmorrhages and alvine fluxes: it has been principally celebrated as a vulnerary, whence its name; and in gargarrims, for aphthæ, and inflammations of the fauces.

PRUNUS GALLICA

[Lond. Ed.] *Frußus*.

Prunus domestica Lin.

The common prune.

The medical effects of the common prunes are, to abate heat, and gently loosen the belly; which they perform by lubricating the passage, and softening the excrement. They are of considerable service in costiveness, accompanied with heat or irritation, which the more stimulating cathartics would tend to aggravate: where prunes are not of themselves sufficient, their effects may be promoted by joining them with a little rhubarb or the like; to which may be added some carminative ingredient to prevent their occasioning flatulencies.

PRUNUS SYLVESTRIS

[Lond. Ed.]

Prunus spinosa Lin.

The sloe.

These have a very rough austere taste, especially before they have been mellowed by frosts. The juice of the unripe fruits inspissated to a proper consistence, is called *acacia Germanica*, and usually sold in the shops for the true Egyptian acacia: it is equally astringent with the Egyptian sort: but has more of a sharp or tartish taste, without any thing of the sweetish relish of the other. A conserve of the fruit is directed by the London college.

PSYLLIUM [Succ.] Semen.

Plantago Psyllium Lin.

Fleawort; the seeds.

This is a sort of plantain, grows wild in the warmer climates, and is sometimes met with in our gardens: it differs from the common plantains in having its stalks branched, with leaves upon them. The seeds have been usually brought from the south of France; they are small, but supposed to resemble in shape a flea, whence the English name of the plant. These seeds have a nauseous, mucilaginous taste: boiled in water, they yield a considerable quantity of mucilage, which is sometimes used in emollient glysters. Alpinus relates, that among the Egyptians this mucilage is given in ardent fevers, and that it generally either loosens the belly or promotes sweat.

PTARMICA [Brun.] Radix.

Achillea Ptarmica Lin.

Sneeze-wort; the root.

This grows wild on heaths and in moist shady places: the flowers, which are of a white colour, come forth in June and July. The roots have an acrid smell, and a hot biting taste: when chewed they occasion a plentiful discharge of saliva;

saliva; and when powdered and snuffed up the nose provoke sneezing. These are the only intentions to which they have been usually applied.

PULEGIUM [Lond. Ed.]

Herba, flor.

Plantago Pulegium Lin.

Penny-royal; the flower.

This plant grows spontaneously, in several parts of England, on moist commons, and in watery places; creeping on the ground, and striking roots at the joints. Our markets have been for some time supplied with a garden sort, which is larger than the other, and grows upright.

Pennyroyal is a warm, pungent herb, of the aromatic kind, similar to mint, but more acrid and less agreeable: it has long been held in great esteem as an aperient and deobstruent, particularly in hystERIC complaints, and suppressions of the uterine purgations. For these purposes, the distilled water is generally used, or an infusion of the leaves. Both water and rectified spirit extract the virtues of this herb by infusion, and the greatest part of them in distillation.

In the shops are kept a simple water, a spirit, and an essential oil obtained from this vegetable. But under any form it is now less frequently employed than formerly.

PULSATILLA NIGRI-

CANS [Ed.] *Herba cum floribus.*

Anemone pratensis Lin.

Meadow anemone.

This is the most acrid of the anemonies; and is recommended by Dr Stoerk, in the quantity of half an ounce of the distilled water, or five grains of the extract,

twice or thrice a-day in venereal nodes, pains, ulcers with caries, chronic eruptions, amenorrhœa, various chronic affections of the eye particularly blindness from obscurities of the cornea. Its common effects are nausea or vomiting, an augmented discharge of urine, diarrhœa, and increased pain at first in the affected part.

PYRETHRUM [Lond. Ed.]

Radix.

Anthemis Pyrethrum Lin.

Pellitory of Spain; the root.

This plant, though a native of the warm climates, bears the ordinary winters of this, and often flowers successively from Christmas to May; the roots grow also larger with us than those with which the shops are usually supplied from abroad.

Pellitory root has no sensible smell; its taste is very hot and acrid, but less so than that of arum; the juice expressed from it has scarcely any acrimony, nor is the root itself so pungent when fresh as after it has been dried. Water, assisted by heat, extracts some share of its taste; rectified spirit, the whole; neither of them elevate any thing in distillation. The principal use of pyrethrum in the present practice is as a masticatory, for promoting the salival flux; by this means it often relieves the toothach, some kinds of pains of the head, and lethargic complaints.

QUASSIA [Lond. Ed.] Lig-

num, cortex, radix.

Quassia amara Lin.

Quassia; the wood, bark, and root.

This root is about the thickness of a man's arm; its wood is whitish, becoming yellowish by exposure

sure to the air. It has a thin, grey, fissured, brittle bark, which is deemed in Surinam more powerful than the wood. Quassia has no sensible odour, but is one of the most intense, durable, pure bitters known. Its infusion, decoction, and tincture are almost equally bitter and yellowish, but they are not blackened by a chalybeate.

It was much used in a fatal fever in Surinam, and is said to be effectual in suppressing vomiting.

It is said to be less antiseptic than Peruvian bark; but, like Colombo, another pure bitter, it preserves bile longer from putrefaction. The best form is that of pills of the extract.

QUERCUS [Lond. Ed.] Cortex.

Quercus robur Lin.

Oak tree; the bark.

This bark is a strong astringent; and hence stands recommended in hæmorrhages, alvine fluxes, and other preternatural or immoderate secretions; and in these it is sometimes attended with good effects.

RADIX INDICA LOPEZIANA [Ed]

Radix Indica a Joanne Lopez denominata, Gaubii Adversaria.

Indian, or Lopez root.

The tree is unknown. Neither the woody or cortical part of the root has any remarkable sensible quality. A slight bitterness is perceptible, and it is recommended, like simarouba, in diarrhoeas even of the colliquative kind, in half-drachm doses four times a day. Little of this root has been brought to Europe: but some of those who have had an opportunity of employing it, speak in very high terms of its effects.

RAPHANUS RUSTICANUS

[Lond. Ed.] Radix.

Cochlearia Armoracia Lin.

Horse-radish root.

This plant is sometimes found wild about river sides, and other moist places; for medicinal and culinary uses, it is cultivated in gardens; it flowers in June, but rarely perfects its seeds in this country. Horse-radish root has a quick pungent smell, and a penetrating acrid taste; it nevertheless contains in certain vessels a sweet juice, which sometimes exudes upon the surface. By drying, it loses all its acrimony, becoming first sweetish, and afterwards almost insipid: if kept in a cool place, covered with sand, it retains its qualities for a considerable time. The medical effects of this root are, to stimulate the solids, and promote the fluid secretions:

it seems to extend its action through the whole habit, and affect the minutest glands. It has frequently done service in some kinds of scurvy and other chronic disorders. Sydenham recommends it likewise in dropries, particularly those which sometimes follow intermittent fevers. Both water and rectified spirit extract the virtues of this root by infusion, and elevate them in distillation: along with the aqueous fluid, an essential oil arises, possessing the whole taste and pungency of the horse-radish. From this root, the *Spiritus raphani compositus* derives its name, and no inconsiderable share of its activity.

REALGAR, a fossil composed of arsenic and sulphur. See ARSENICUM.

RESINA ALBA. See TEREBINTHINA.

RHA-

RHABARBARUM [Lond.]
RHEUM [Edin.] Radix.*Rheum palmatum* Lin.

Rhubarb; the root.

This plant grows spontaneously in China, and endures the colds of our climate. Two sorts of rhubarb are met with in the shops. The first is imported from Turkey and Russia, in roundish pieces freed from the bark, with a hole through the middle of each; they are externally of a yellow colour, and on cutting, appear variegated with lively reddish streaks. The other, which is less esteemed, comes principally from China in longish pieces, harder, heavier, and more compact than the foregoing.

The first sort, unless kept very dry, is apt to grow mouldy and worm-eaten: the second is less subject to these inconveniences. Some of the more industrious artists are said to fill up the worm-holes with certain mixtures, and to colour the outside of the damaged pieces with powder of the finer sorts of rhubarb, and sometimes with cheaper materials: this is often so nicely done, as effectually to impose on the buyer, unless he very carefully examines each piece. The marks of good rhubarb are, that it be firm and solid, but not flinty; that it be easily pulverisable, and appear, when powdered, of a fine bright yellow colour: that upon being chewed, it impart to the spittle a saffron tinge, without proving slimy or mucilaginous in the mouth. Its taste is subacrid, bitterish, and somewhat astringent: the smell slightly aromatic.

Rhubarb is a mild cathartic, which operates without violence or irritation, and may be given with safety even to pregnant women and to children. In some people,

however, it occasions severe griping. Besides its purgative quality, it is celebrated as an astringent, by which it strengthens the tone of the stomach and intestines, and proves useful in diarrhoea and disorders proceeding from laxity. Rhubarb in substance operates more powerfully as a cathartic than any of the preparations of it. Watery tinctures purge more than the spirituous ones; while the latter contain in greater perfection the aromatic, astringent, and corroborating virtues of the rhubarb. The dose, when intended as a purgative, is from a scruple to a drachm or more.

The Turkey rhubarb is, among us, universally preferred to the East India sort, though this last is for some purposes at least equal to the other: it is manifestly more astringent, but has somewhat less of an aromatic flavour. Tinctures drawn from both with rectified spirit, have nearly the same taste: on distilling of the menstruum, the extract left from the tincture of the East India rhubarb proved considerably the strongest. They are both the produce of the same climate, and probably the roots of the same plant taken up at different seasons, or cured in a different manner.

Rhubarb is now raised in Britain equal to any that is imported.

The official preparations of this drug are, a watery and a vinous infusion, a simple and a compound tincture. It is also an ingredient in different compositions, such as the *Tinctura rhei cum oleo pilule rhei compositæ*, and some others.

RHAMNUS CATHARTICUS. See SPINA CERVINA.

RHA.

RHAPONTICUM [Rosi.] Ra-

dx.

Rheum raphanicum Lin.

Monks rhubarb, or Rhapontic; the root.

Rhapontic is a large roundish-leaved plant, growing wild on the mountain Rhodope in Thrace, from whence it was brought into Europe, about the year 1610, by Alpines: it bears the hardest winters of this climate, and is not unfrequent in our botanic gardens. The root of this plant (which appears evidently to have been the rhubarb of the antients) is by some confounded with the modern rhubarb, though considerably different both in appearance and quality. The rhapontic is of a dusky colour on the surface; of a loose spongy texture; considerably more astringent, but less purgative, than rhubarb, two or three drachms being required for a dose.

RHEUM See RHABBARUM.

RHODODENDRON [Ed.]

Herb.

Rhododendron chrysanthemum Lin.

Rhododendron; the herb.

This plant is a native of Siberia, where a weak infusion of it is used as tea. The Siberians use a decoction of it in rheumatism and gout. They put about two drachms of the dried shrub in an earthen pot, with about ten ounces of boiling water, keeping it near a boiling heat for a night, and then they take in the morning. It is said to occasion heat, thirst, a degree of delirium, and a peculiar creeping like sensation in the parts affected. The use of liquids is not allowed during its operation, as this is apt to induce vomiting. In a few hours the pain and dis-

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agreeable symptoms are relieved, and two or three doses generally complete the cure. The powder has also been used in doses of a few grains.

Hitherto it has been so little employed in Britain, that it has no place in the London pharmacopœia; But in some cases in which it has been used at Edinburgh, it has been productive of good effects; and accordingly it is now introduced into the Edinburgh pharmacopœia, as well as into the pharmacopœia Rossica, where it first had a place.

RIBES NIGRUM [Lond.]

Fruſus.

Ribes nigrum Lin.

Black currants; the berry.

RIBES RUBRUM [Lond.]

Fruſus.

Ribes rubrum Lin.

Red currants; the berry.

These have a cool acidulous sweet taste, sufficiently agreeable both to the palate and stomach.

The black currants are the basis of an official syrup, and an inspissated juice, which are frequently employed with advantage in recent catarrhs, attended with slight sore throat.

RICINUS [Lond. Ed.] Semen

et gjus Oleum.

Ricinus communis Lin.

Castor nut; the seed.

These seeds are nuts about the size of beans, which in their brittle shells contain white kernels of a sweet, oily, and somewhat nauseous taste. The oil, commonly called nut or castor oil, is got by expression, retains somewhat of the mawkishness and acrimony of the nut, but is, in general, a safe and mild laxative in cases where we wish to avoid

avoid irritation, as in those of colic, calculus, gonorrhœa, &c. and it is also used as a purgative in worm cases. Half an ounce or an ounce commonly answers for an adult, and a drachm or two for an infant.

An oil of an inferior kind, but possessing nearly the same qualities, is obtained by boiling.

Many people have so great an aversion to oil in its pure state, that this purgative cannot be taken without great reluctance; and accordingly different modes of taking it have been proposed. Some prefer taking it swimming on a glass of water or peppermint water, or in the form of emulsion, with mucilage, or with the addition of a little rum. Sometimes it is necessary to increase its activity by adding some other purgative. And with this view, nothing answers better than a small quantity of tincture of jalap, or compound tincture of senna.

ROSA DAMASCÆNA

[*London.*] *Petalum.*

ROSA PALLIDA [*Edin.*] *Petala.*

Rosa centifolia Lin.

The damask rose: the petal.

This elegant flower is common in our gardens. Its smell is very pleasant and almost universally admired; its taste bitterish and subacid. In distillation with water, it yields a small portion of butyraceous oil, whose flavour exactly resembles that of the rose. This oil, and the distilled water, are very useful and agreeable cordials. Hoffman strongly recommends them as of singular efficacy for raising the strength, cheering and recruiting the spirits, and allaying pain; which they perform without raising any heat

in the constitution, and rather abating it when inordinate. Damask roses, besides their cordial aromatic virtue, which resides in their volatile parts, have a mildly purgative one, which remains entire in the decoction left after the distillation: this with a proper quantity of sugar, forms an agreeable laxative syrup, which has long kept its place in the shops.

ROSA RUBRA [*London.* Ed.]

Petalum.

Rosa gallica Lin.

The red rose; the petal.

This has very little of the fragrance of the foregoing pale sort; and instead of its purgative quality, has a mild gratefully astringent one, especially before the flower has opened: this is considerably improved by hasty exsiccation; but both the astringency and colour are impaired by slow drying. In the shops are prepared a conserve, an infusion, a honey, and a syrup of this flower.

ROSMARINUS [*London.*] *Ca-*

cumen, flos. [*Edin.*] *summitas florantis.*

Rosmarinus officinalis Lin.

Rosemary; the top and flower.

This is a native of Spain, Italy, and the southern parts of France, where it grows in great abundance upon dry gravelly grounds; in the like soils it thrives best with us, and likewise proves stronger in smell than when produced in moist rich ones: this observation obtains in almost all the aromatic plants.

Rosemary has a fragrant smell, and a warm pungent bitterish taste, approaching to those of lavender: the leaves and tender tops are strongest; next to these the cup of the flower; the flowers themselves

selves are considerably the weakest, but most pleasant. Aqueous liquors extract a great share of the virtues of rosemary leaves by infusion, and elevate them in distillation; along with the water arises a considerable quantity of essential oil, of an agreeable strong penetrating smell. Pure spirit extracts in great perfection the whole aromatic flavour of the tops of rosemary, but elevates very little of it in distillation: hence the resinous mass left after abstracting the spirit, proves an elegant aromatic, very rich in the peculiar qualities of the plant. The flowers of rosemary give over great part of their flavour in distillation with pure spirit; by watery liquors, their fragrance is much injured; and by heating, destroyed. The official preparations of rosemary are, an essential oil, and a spirit commonly known by the title of *Hungary water*; the tops are also an ingredient in the compound tincture of lavender, and some other formulæ.

RUBIA [Lond. Ed.] Radix.

Rubia tinctorum Lin.

Madder; the root.

Madder is raised in some of our gardens for medicinal purposes: it was formerly cultivated among us, in quantity, for the use of the dyers, who are at present supplied from Holland and Zealand. It has little or no smell, and a sweetish taste, mixed with a little bitterness. The virtues attributed of it are those of a detergent and aperient; whence it has been recommended in obstructions of the viscera, particularly of the kidneys; in coagulations of the blood from falls or bruises; in the jaundice, and beginning dropsies. It is observable, that this root, taken internally, tinges the urine

of a deep red colour; and we have accounts of its producing a similar effect upon the bones of animals who had it mixed with their food: all the bones, particularly the more solid ones, were changed, both externally and internally, to a deep red; but neither the fleshy or cartilaginous parts suffered any alteration: some of these bones macerated in water for many weeks together, and afterwards steeped and boiled in spirit of wine, lost none of their colour, nor communicated any tinge to the liquors. The colouring part of this root appears therefore to be possessed of great subtilty of parts; whence its medical virtues seem to deserve inquiry.

Some practitioners use it in half drachm doses, several times a day as an emmenagogue.

RUBUS IDÆUS [Lond.]

Fruſus.

Rubus idæus Lin.

Raspberry; the fruit.

This shrub is a native of the northern parts of Europe, and is common in our gardens. It flowers in May; and ripens its fruit in July. Raspberries have a pleasant sweet taste, accompanied with a peculiarly grateful flavour, on account of which they are chiefly valued. As to their virtues, they moderately quench thirst, abate heat, strengthen the viscera, and promote the natural excretions. An agreeable syrup, prepared from the juice, is directed to be kept in the shops.

RUBUS NIGER [Rosc.]

Bacca.

Rubus fruticosus Lin.

The bramble; the fruit.

This shrub is frequently found wild in woods and hedges. The berries have a faint taste, without any

any of the agreeable flavour of the foregoing; the leaves are somewhat astringent.

They enter no official composition, are rarely directed in practice, and hence have now no place in our pharmacopœias.

RUSCUS [*Brun.*] *Radix.*

Ruscus aculeatus Lin.

Butcher's broom; the root.

This is a small prickly plant, sometimes found wild in woods. The root has a soft sweetish taste, which is followed by a bitterish one; it is sometimes made an ingredient in apozoms and diet-drinks, for opening slight obstructions of the viscera, and promoting the fluid secretions.

RTA [*Lond. Ed.*] *Herba.*

Ruta graveolens Lin.

Rue; the herb.

This is a small shrubby plant, met with in our gardens, where it flowers in June, and holds its green leaves all the winter; we frequently find in the markets a narrow-leaved sort, which is cultivated in preference to the other, on account of its leaves appearing variegated during the winter with white streaks.

Rue has a strong ungrateful smell, and a bitterish, penetrating taste; the leaves, when in full vigour, are extremely acrid, in so much as to inflame and blister the skin, if much handled. With regard to their medicinal virtues, they are powerfully stimulating, and detergent; they quicken the circulation, open obstructions of the excretory glands, and promote the fluid secretions.

The writers on the materia medica in general have entertained a very high opinion of the virtues of this plant. Boerhaave is full

of its praises; particularly of the essential oil, and the distilled water cohobated, or redistilled several times, from fresh parcels of the herb; after somewhat extravagantly commending other waters prepared in this manner, he adds with regard to that of rue, that the greatest commendations he can bestow upon it fall short of its merit: "What medicine (says he) can be more efficacious for promoting sweat and perspiration, for the cure of the hysteric passion, and of epilepsies, and for expelling poison." Whatever service rue may be of in the two last cases, it undoubtedly has its use in others: the cohobated water, however, is not the most efficacious preparation of it. An extract made by rectified spirit contains, in a small compass, the whole virtues of the rue; this menstruum taking up by infusion all the pungency and flavour of the plant, and elevating nothing in distillation. With water, its peculiar flavour and warmth, arise; the bitterness, and a considerable share of the pungency, remaining behind.

The only official preparation of rue now retained in our pharmacopœias is the extract: but it is an ingredient in the compound powder of myrrh, and some other compositions.

SABINA [*Lond. Ed.*] *Folium.*

Juniperus Sabina Lin.

Savin; the leaf.

This is an evergreen shrub, clothed with small, somewhat prickly, leaves: it does not produce fruit till very old, and hence has been generally reputed barren. The leaves have a bitter, acrid, biting taste; and a strong disagreeable smell: distilled with water,

ter, they yield an essential oil, in larger quantity, as Hoffman observes, than any other known vegetable, the turpentine tree alone excepted.

Savin is a warm, irritating, aperient medicine, capable of promoting sweat, urine, and all the glandular secretions. The distilled oil is one of the most powerful emmenagogues; and is found of service in obstructions of the uterus or other viscera, proceeding from laxity and weaknesses.

The powder is sometimes used for consuming venereal warts.

The essential oil and watery extract are kept in the shops; and, as well as the rue, the savin is likewise an ingredient in the compound powder of myrrh.

SACCHARUM NON PURIFICATUM [Lond. Ed.]

Brown sugar.

SACCHARUM PURIFICATUM, five Bis coctum [Lond. Ed.]

Double refined sugar.

SACCHARUM CANTUM ALBUM ET RUBRUM [Ross.]

Sugar candy, white and brown.

Sugar is the essential salt of the *arundo saccharifera*, a beautiful large cane growing spontaneously in the East Indies, and some of the warmer parts of the West, and cultivated there in great quantity. The expressed juice of the cane is clarified with the addition of lime-water, and boiled down to a due consistence; when removed from the fire, the saccharine part concretes from the grosser mucilaginous matter, called *treacle* or *melasses*. This, as yet impure sugar, is farther purified in conical moulds,

by spreading moist clay on the upper broad surface: the watery moisture, slowly percolating through the mass, carries with it a considerable part of the remains of the treacly matter. This clayed sugar, imported from the West Indies and America is by our refiners dissolved in water, the solution clarified by boiling with whites of eggs and despumation, and after due evaporation poured into moulds: as soon as the sugar has concreted, and the fluid part strained off, the surface is covered with moist clay as before. The sugar, thus once refined, by a repetition of the process becomes the double-refined sugar of the shops. The candy, or crystals, are prepared by boiling down solutions of sugar to a certain pitch, and then removing them into a hot room, with sticks set across the vessel for the sugar to shoot on: the crystals prove of a white or brown colour, according as the sugar was pure or impure.

The uses of sugar as a sweet are sufficiently well known. The impure sorts contain an unctuous or oily matter; in consequence of which they prove emollient and laxative. The crystals are most difficult of solution; and hence are properest where this soft lubricating sweet is wanted to dissolve slowly in the mouth.

SAGAPENUM [Lond. Ed.]

Gummi resinæ.

Sagapenum; the gum-resin.

This is a concrete juice brought from Alexandria, either in distinct tears, or run together in large masses. It is outwardly of a yellowish colour; internally, somewhat paler, and clear like horn; it grows soft on being handled, and sticks to the fingers: its taste

is hot and biting : the smell disagreeable, somewhat resembling that of a leek,

Sagapenum is an useful aperient and deobstruent ; and is frequently prescribed either alone or in conjunction with ammoniacum or galbanum, for opening obstructions of the viscera, and in hysterical disorders arising from a deficiency of the menstrual purgations. It likewise promotes expectoration, and proves of considerable service in some kinds of asthma and chronic catarrh, where the lungs are oppressed by viscid phlegm. It is most commodiously given in the form of pills : from two or three grains to half a drachm may be given every night or oftener, and continued for some time. When sagapenum is scarce, the drug-gifts usually supply its place with the larger and darker coloured masses of bdellium, broken into pieces ; which are not easily distinguished from it.

Sagapenum was an ingredient in the compound powder of myrrh, electuary of bay berries, mithridate and theriaca of the London pharmacopœia.

But from such of these formulæ as are still retained it is now rejected. It enters the gum pills of the London college ; but it has no place in any formulæ of the Edinburgh pharmacopœia, a preference being given to ammoniacum and galbanum.

SAGO [Gen.]

Cycas circinalis Lin.

Sago.

This is the produce of an original tree of the palm tribe. The medullary part of the tree is beaten with water, and made into cakes, which are used by the Indians as bread. They likewise put the powder into a funnel, and wash it

with water over a hair sieve which allows only the finer part to pass through. The water on standing, deposits the feculæ ; which being passed through perforated copper plates, is formed into grains called *Sago*. It furnishes an agreeable jelly with water, milk, or broth, and is much used in phtisical and convalescent cases.

SAL ABSINTHII. See *CINERES CLAVELLATI*.

SAL ALKALINUS FIXUS VEGETABILIS. See *CINERES CLAVELLATI*.

SAL ALKALINUS FIXUS FOSSILIS. See *BARILLA*.

SAL CATHARTICUS AMARUS. See *MAGNESIA TRIOLATA*.

SAL AMMONIACUS [*Lond. Ed.*]

Ammonia muricata.

Sal ammoniac.

This is an artificial saline concrete, prepared by sublimation from the foot of animal-dung. It is brought from Egypt in considerable quantities, but we are now principally supplied in Britain from our own manufactures, several of which are established in different parts of the country. Though the cheapest and most commodious process for preparing it is not generally known, yet it is with good reason conjectured to be principally formed from sea-salt and foot; the former furnishing the muriatic acid, the latter the volatile alkali. It is generally in large round cakes, convex on one side, and concave on the other ; and sometimes in conical loaves : on breaking they appear composed of needles, or fibres, running transversely. The best are almost transparent colourless, and free from any visible impurities :

purities: those most commonly met with are of a grey yellowish colour on the outside, and sometimes black, according as the matter is more or less impure. The taste of this salt is very sharp and penetrating. It dissolves in twice its weight, or a little less, of water; and upon evaporating a part of the menstruum, concretes again into long shining spicula, or thin fibrous plates like feathers.

Sal ammoniac is composed of muriatic acid, united with volatile alkali. If mixed with fixed alkalies, or absorbent earths, and exposed to a moderate fire, a large quantity of volatile salt sublimes, the acid remaining united with the intermedium; if treated in the same manner with quicklime, the penetrating volatile spirit arises in a caustic state, but no solid salt is obtained. Exposed alone to a considerable heat, it sublimes entire, without any alteration of its former properties: ground with certain metallic substances, it elevates some part of them along with itself, and concretes with the remainder into a mass, which readily flows into a liquor in a moist air; this appears in most respects similar to a saturated solution of the metal made directly in muriatic acid.

Pure sal ammoniac is a perfectly neutral salt, capable of promoting a diaphoresis, or the urinary discharge, according to certain circumstances in the constitution, or as the patient is managed during the operation. If a drachm of the salt be taken, dissolved in water, and the patient kept warm, it generally proves sudorific; by moderate exercise, or walking in the open air, its action is determined to the kidneys; a large dose gently loosens the belly,

and a still larger proves emetic. This salt is recommended as an excellent febrifuge, and has been held a great secret in the cure of intermittents. It is undoubtedly a powerful aperient, and seems to pass into the minutest vessels; and as such may in some cases be of service, either alone, or joined with bitters or the bark. This salt is sometimes employed externally as an antiseptic, and in lotions and fomentations, for oedematous and scirrhous tumours: and also in gargarisms for inflammations of the tonsils. Some use it in form of lotion in certain ulcers, and for removing common warts, which it does very effectually.

SAL MURIATICUS [Lond.]

Natron muriatum.

SAL MARINUS HISPANUS [Ed.]

Muriacalæ solis parata.

Soda murata.

Sea salt, or common salt.

This is a neutral salt, differing from most others in occasioning thirst when swallowed. It dissolves in about three times its weight of water; the solution slowly evaporated, affords cubical crystals, which unite together into the form of hollowed truncated pyramids. Exposed to the fire, it crackles and flies about, or decrepitates, as it is called: it afterward melts, and appears fluid as water. A small quantity of this salt, added to the nitrous acid, enables it to dissolve gold, but renders it unfit for dissolving silver; if a solution of silver be poured into liquors containing even a minute portion of common salt, the whole immediately grows turbid and white; this phenomenon is owing to the precipitation of the silver by the muriatic acid.

This salt is either found in a solid

solid for. in the bowels of the earth, or dissolved in the waters of the sea or saline springs.

1. *Sal gemmae*. Rock salt. This is met with in several parts of the world, but in greatest plenty in certain deep mines, of prodigious extent, near Cracow in Poland; some is likewise found in England, particularly in Cheshire. It is for the most part very hard, sometimes of an opaque snowy whiteness, sometimes of a red, green, blue, and other colours. When pure, it is perfectly transparent and colourless; other sorts are purified by solution in water and crystallisation, in order to fit them for the common uses of salt.

2. *Sal marinus*, or *Sal colus*. The salt extracted from sea waters and saline springs. Sea waters yield from one fiftieth to one-thirtieth their weight of pure salt: several springs afford much larger quantities; the celebrated ones of our own country at Nantwich, Northwich and Droitwich, yield (according to Dr Brownrigg) above one-sixth. There are two methods of obtaining the common salt from these natural solutions of it: The one a hasty evaporation of the aqueous fluid till the salt begins to concreté, and fall in grains to the bottom of the evaporating pan, from whence it is raked out, and set in proper vessels for the brine or bitter to drain from it: the other, a more slow and gradual evaporation, continued no longer than till a saline crust forms on the top of the liquor; which, after removing the fire, soon begins to shoot, and run into crystals of a cubical figure. In the warmer climates, both these processes are effected by the heat of the sun. The salts obtained by them differ

very considerably: that got by a hasty evaporation is very apt in a moist air, to run per deliquium; an inconvenience to which the crystallized salt is not subject: this salt is likewise found better for preserving meat, and sundry other purposes.

Common salt in small quantities, is supposed to be warming, drying, and to promote appetite and digestion: in large doses, as half an ounce, it proves cathartic. It is sometimes used to check the operation of emetics, and make them run off by stool; and as a stimulus in glysters.

SAL CORNU CERVI; [Ed.]

Ammoniu secca, ex ossibus vel cornibus animalium igne paratus, et ab oleo empyreumatico, quantum igne feripet, purificata.

Salt of hartshorn; i. e. dry volatile alkaline salt, obtained by means of fire from the bones or horns of animals, and purified from its oil.

This article, to which the London college now give the name of *Ammonia preparata*, will afterwards come to be mentioned under the head of *Salts*. Here, it is sufficient to observe, that it is a quick and powerful stimulant, and as such is applied externally to the nose in syncope; and with oil in synanche, and some other inflammations, as a rubefacient. It is used internally in various low states of the system. See SPIRITUS CORNU CERVI.

SALIX [Ed.] *Ramulorum cortex.*

Salix fragilis Lin.

The willow; the bark of the branches.

This bark possesses a considerable

able degree of bitterness and astringency. It has been recommended by some as a substitute for the Peruvian bark, and of the indigenous barks which have been proposed, it is perhaps one of the most effectual. But in point of efficacy it is in no degree to be compared with the Peruvian bark.

SALVIA [Lond. Ed.] *Folium Salvia officinalis* Lin.

Sage; the leaf.

Of the *salvia* different varieties are in use, particularly those distinguished by the titles of *major* and *minor*. These plants are common in our gardens, and flower in May and June: the green and red common sages differ no otherwise than in the colour of their leaves; the seeds of one and the same plant produce both: the small sort is a distinct species: its leaves are narrower than the others, generally of a whitish colour, and never red. Both sorts are moderately warm aromatics, accompanied with a slight degree of astringency and bitterness: the small sort is the strongest, the large most agreeable.

The writers on the materia medica are full of the virtues of sage, and derive its name from its supposed salutary qualities.

Salvia salvatrix, natura conciliatrix.

Cur. moriatur homo, cui salvia crescit in horto.

Its real effects are, to moderately warm and strengthen the vessels; and hence, in cold phlegmatic habits, it excites appetite, and proves serviceable in debilities of the nervous system. The best preparation for these purposes is an infusion of the dry leaves, drank as tea; or a tincture, or ex-

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tract, made with rectified spirit, taken in proper doses; these contain the whole virtues of the sage; the distilled water and essential oil, only its warmth and aromatic quality, without any of its roughness or bitterness. Aqueous infusions of the leaves, with the addition of a little lemon juice, prove an useful diluting drink in febrile disorders, being sufficiently agreeable to the palate.

SAMBUCUS [Lond. Ed.] *Cor-tex interior, flos, bacca.*

Sambucus nigra Lin.

Black-berryed elder; the inner bark, flower, and berry.

This is a large shrub, frequent in hedges: it flowers in May, and ripens its fruit in September. The inner green bark of its trunk is gently cathartic; an infusion of it in wine, or the expressed juice, in the dose of half an ounce or an ounce, is said to purge moderately, and in small doses to prove an efficacious deobstruent, capable of promoting all the fluid secretions.

The young buds, or rudiments of the leaves, are strongly purgative, and act with so much violence as to be deservedly accounted unsafe. The flowers are very different in quality: these have an agreeable aromatic flavour, which they give over in distillation with water, and impart by infusion to vinous and spirituous liquors. The berries have a sweetish, not unpleasant taste; nevertheless, eaten in substance, they offend the stomach: the expressed juice, inspissated to the consistence of a rob, proves an useful aperient medicine; it opens obstructions of the viscera, promotes the natural evacuations, and if continued for a length of time, does considerable service in several chronic disorders. It is obier-

observable, that this juice, which in its natural state is of a purplish colour, tinges vinous spirits of a deep red.

This article was formerly kept in the shops, under several different formulæ. The *Succus spissatus* and *Unguentum sambuci* still retain a place in the London Pharmacopœia; but the sambucus does not now enter any fixed formula in that of Edinburgh.

A rob was prepared from the berries; an oil of elder by boiling the flowers in olive oil; and an ointment by boiling them in a mixture of oil and suet.

SANGUIS DRACONIS

[*Lond. Ed.*] *Gummi resina.*

Dragon's blood.

What is called dragon's blood is a gummi refinous substance brought from the East Indies, either in oval drops, wrapped up in flax leaves; or in large masses, composed of smaller tears. It is said to be obtained from the palm-juncus draco the calamus rotang, the dracena draco, the pterocarpus draco, and several other vegetables.

The writers on the materia medica in general, give the preference to the former, though the others are frequently of equal goodness; the fine dragon's blood of either sort breaks smooth, free from any visible impurities, of a dark red colour, which changes on being powdered into an elegant bright crimson. Several artificial compositions, coloured with the true dragon's blood, or Brazil wood, are sometimes sold instead of this commodity: some of these dissolve like gums, in water; others crackle in the fire, without being inflammable; while the genuine sanguis draconis re-

dily melts and catches flame, and is not acted on by watery liquors. It totally dissolves in pure spirit, and tinges a large quantity of the menstruum of a deep red colour: it is likewise soluble in expressed oils, and gives them a red hue, less beautiful than that communicated by anchusa. This drug, in substance, has no sensible smell or taste; when dissolved, it discovers some degree of warmth and pungency. It is usually, but without foundation, esteemed a gentle astringent, and sometimes directed as such in extemporaneous prescription, against feminal gleet, the fluor albus, and other fluxes. In these cases, it is supposed to produce the general effects of refinous bodies, slightly incrassating the fluids, and somewhat strengthening the solids. But in the present practice it is very little used, either externally or internally. It is still however an ingredient in the *Emplastrum thuris* of the London pharmacopœia. It formerly entered the *Pulvis sylvaticus*, or the *Pulvis aluminis compositus* as it is now called, of the Edinburgh college; but from this it has with propriety been rejected, giving place to a much more active article, the gum-kino: and perhaps the sanguis draconis might even with propriety be omitted in our pharmacopœias, at least till its qualities be really ascertained.

SANTALUM CITRINUM

[*Ed.*]

Santalum album Lin.

Yellow sanders.

This article, which is the inferior part of the wood, is of a pale yellowish colour, of a pleasant smell, and a bitterish aromatic taste, accompanied with an agreeable kind of pungency. This elegant

elegant wood might undoubtedly be applied to valuable medical purposes, though at present it is very rarely used. Distilled with water it yields a fragrant essential oil, which thickens in the cold into the consistence of a balsam. Distilled in pure spirit, it imparts a rich yellow tincture; which being committed to distillation, the spirit arises without any considerable flavour of the Saunders. Hoffman considers this extract as a medicine of similar virtues to ambergris; and recommends it as an excellent restorative in great debilities.

SANTALUM RUBRUM

[*Lond. Ed.*]

Pterocarpus santalinus Lin.

Red Saunders.

This is a wood brought from the East Indies in large billets, of a compact texture, of a dull red, almost blackish colour on the outside, and a deep brighter red within. It has no manifest smell, and little or no taste. It has been commended as a mild astringent, and as a corroborant; but these are qualities that belong only to the yellow fort.

The principal use of red Saunders is as a colouring drug; with which intention it is employed in some formulæ, particularly in the *Tinctura lavendule composita*. It communicates a deep red to rectified spirit, but gives no tinge to aqueous liquors: a small quantity of resin, extracted by means of spirit, tinges a large one of fresh spirit, of an elegant blood red. There is scarcely any oil, that of lavender excepted, to which it communicates its colour. Geofroy and others take notice, that the Brazil woods are sometimes substituted for red Saunders; and

the college of Brussels are in doubt whether all that is sold among them for Saunders be not really Brazil wood. According to the account which they have given, their Saunders is certainly the Brazil wood; the distinguishing character of which is, to impart its colour to water.

SANTONICUM [*Lond. Ed.*]

Semen.

Artemisia Santonicum Lin.

Worm seed.

This is a small, light, chaffy seed, composed as it were of a number of thin membranaceous coats, of a yellowish colour, an unpleasant smell, and a very bitter taste. These seeds are celebrated for anthelmintic virtues, which they have in common with other bitters; and are sometimes taken with this intention, either mixed with molasses or candied with sugar.

SAPO [*Lond.*] *Ex oleo olivæ et natro confectus.*

SAPO ALBUS HISPANUS

[*Ed.*]

White Spanish sope.

SAPO MOLLIS.

Common soft sope.

SAPO NIGER.

Black soft sope.

Sope is composed of expressed vegetable oils or animal fats, united with caustic alkaline lixivium. The first sort, or white hard sope, is made with the finer kinds of olive oil; the common soft sort with coarser oils, fat tallow, or a mixture of all these; and the black with train-oil.

The purer hard sope is the only sort intended for internal use.

Boerh.

Boerhaave was a great admirer of sope, and in his private practice seldom prescribed any resinous pills without it, unless where an alkalulent or putrid state of the juices forbade its use. It has been supposed a powerful menstruum for the human calculus; and a solution of it in lime-water was formerly esteemed one of the strongest solvents that could be taken with safety into the stomach.

The soft sopes are more penetrating and acrimonious than the hard. Their principal medical use is for some external purposes, although when dissolved in ale, they have been directed to be taken in considerable quantity for the cure of jaundice.

Hard sope gives name to an officinal plaster, liniment, and balsam.

SAPONARIA [Succ.] *Folia, Radix.*

Saponaria officinalis Lin.

Sopewort, or bruisewort; the herb and root.

This grows wild, though not very common, in low wet places, and by the sides of running waters; a double-flowered sort is frequent in our gardens. The leaves have a bitter, disagreeable taste: agitated with water they raise a saponaceous froth, which is said to have nearly the same effects with solutions of sope itself, in taking out spots from cloths, and the like. The roots taste sweetish and somewhat pungent, and have a slight smell like those of liquorice: digested in rectified spirit, they yield a strong tincture, which loses nothing of its taste or flavour in being inspissated to the consistence of an extract. This elegant root has not come much into practice among us, though

it promises from its sensible qualities to be a medicine of considerable utility. It is much esteemed by the German physicians as an aperient, corroborant, and sudorific; and preferred by the college of Wirtemberg, by Stahl, Neumann, and others, to *sarsaparilla*.

SARCOCOLLA [Lond.] *Gummi-resina.*

This is a concrete juice, brought from Persia and Arabia in small white, yellow grains, with a few of a reddish, and sometimes of a deep red colour, mixed with them; the whitest tears are preferred, as being the freshest. It is supposed to be the product of the *Penza sareocolla* of Linné. Its taste is bitter, accompanied with a dull kind of sweetness. It dissolves in watery liquors, and appears to be chiefly of the gummy kind, with a small admixture of resinous matter. It is principally celebrated for conglutinating wounds and ulcers (whence its name *σαρκωκωλλας, flesh glue*), a quality to which neither this nor any other drug has a just title. It is an ingredient in the *Pulvis ceruise composuit*.

SARSAPARILLA [Lond. Ed.] *Radix.*

Smilax Sarsaparilla Lin.

Sarsaparilla; the root.

This root is brought from the Spanish West Indies. It consists of a great number of long strings hanging from one head; the long roots, the only part used, are about the thickness of a goose quill, or thicker, flexible, composed of fibres unning their whole length; so that they may be split into pieces from one end to the other. They have a glutinous, bitterish, not ungrateful taste, and no smell.

It was first brought into Europe by the Spaniards, about the year 1563; with the character of a specific for the cure of the lues venerea; and likewise of several obstinate chronic disorders. Whatsoever good effects it might have produced in the warmer climates, it proved unsuccessful in this; in so much, that many have denied it to have any virtue at all. Though very unequal to the character which it bore at first, it appears to be in some cases of considerable use as a sudorific, where more acrid medicines are improper. The best preparations are, a decoction, and extract made with water; a decoction of half an ounce of the root, or a drachm of the extract, may be taken for a dose.

SASSAFRAS [Lond.]

Lignum, radix, gysque cortex, [Ed.]
Lignum radice gysque cortex.

Laurus Sassafras Lin.

Sassafras; the wood, root, and its bark.

Sassafras is brought to us in long straight pieces, very light, and of a spongy texture, covered with a rough fungous bark, outwardly of an ash colour, inwardly of the colour of rusty iron. It has a fragrant smell, and a sweetish aromatic subacid taste: the bark tastes much stronger than any other part; and the small twigs stronger than the large pieces. As to the virtues of this root, it is a warm aperient and corroborant; and frequently employed with good success for purifying the blood and juices. For these purposes, infusions made from the rasped root or bark, may be drank as tea. In some constitutions, these liquors, by their fragrance, are apt, on first taking them, to affect the head: in such

cases they may be advantageously freed from their flavour by boiling. A decoction of sassafras boiled down to the consistence of an extract, is bitterish and subastringent. Hoffman assures us, that he has frequently given this extract to the quantity of a scruple at a time, with remarkable success, for strengthening the tone of the viscera in cachexies, and also in the decline of intermittent fevers, and in hypochondriacal spasms. Sassafras yields, in distillation, an extremely fragrant oil, of a penetrating pungent taste, so ponderous, notwithstanding the lightness of the drug itself, as to sink in water. Rectified spirit extracts the whole taste and smell of sassafras, and elevates nothing in evaporation: hence the spirituous extract proves the most elegant and efficacious preparation, as containing the virtue of the root entire.

The only official preparation of sassafras is the essential oil. The sassafras itself is an ingredient in the *Docodum Saraparilla composum*; and the oil in the *Tinctura guaiaci ammoniata*.

SATUREIA [Suec.] Herba.

Satureia hortensis Lin.

Summer savory; the herb.

This herb is raised annually in gardens for culinary purposes. It is a very pungent warm aromatic; and affords in distillation with water a subtile essential oil, of a penetrating smell, and very hot acrid taste. It yields little of its virtues by infusion to aqueous liquors: rectified spirit extracts the whole of its taste and smell, but elevates nothing in distillation.

SATYRION [Ed.] Radix.

Orchis mascula Lin.

Orchis; the root.

This

This plant is frequent in shady places and moist meadows: each plant has two oval roots, of a whitish colour, a viscid sweetish taste, and a faint unpleasent smell. They abound with a glutinous slimy juice. With regard to their virtues, like other mucilaginous vegetables, they defend the solids from the acrimony of sharp humours; they have also been celebrated, though on no very good foundation, for analeptic and aphrodisiac virtues; and frequently used with these intentions. Salep, a celebrated restorative among the Turks, is prepared from the roots of certain plants of the orchis kind. This drug, as sometimes brought to us, is in oval pieces, of a yellowish white colour. somewhat clear and pellucid, very hard, and almost horny, of little or no smell, and tasting like gum tragacanth. Satyrion root, boiled in water, freed from the skin, and afterwards suspended in the air to dry, has exactly the same appearance: the roots thus prepared, dissolve in boiling water into a mucilage. Geoffroy, who first communicated this preparation of orchis, recommends it in consumptions, in bilious dysenteries, and disorders of the breast, proceeding from an acrimony of the juices.

SCAMMONIUM [Lond. Ed.]

Gummi resina

Convolvulus Scammonia Lin.

Scammony; the gum resin.

Scammony is a concrete juice, extracted from the roots of a large climbing plant growing in Asiatic Turkey. The best comes from Aleppo. in light spongy masses, easily friable, or a shining ash colour verging to black; when powdered, of a light grey or

whitish colour. An inferior sort is brought from Smyrna in more compact ponderous pieces, of a darker colour, and full of sand and other impurities. This juice is chiefly of the resinous kind: rectified spirit dissolves five ounces out of six: the remainder is a mucilaginous substance mixed with dross: proof spirit totally dissolves it, the impurities only being left. It has a faint unpleasent smell, and a bitterish, somewhat acrimonious, taste.

Scammony is an efficacious and strong purgative. Some physicians have condemned it as unsafe, and laid fondry ill qualities to its charge; the principal of which is, that its operation is uncertain, a full dose proving sometimes ineffectual, while at others a much smaller one occasions dangerous hypercatharsis. This difference, however, is owing entirely to the different circumstances of the patient, and not to any ill quality of the medicine; where the intestines are lined with an excessive load of mucus, the scammony passes through them without exerting itself; where the natural mucus is deficient a small dose of this, or any other resinous cathartic, irritates and inflames. Many have endeavoured to abate its force and correct its imaginary virulence, by exposing it to the fume of sulphur, dissolving it in acid juices, and the like: but this could do no more than destroy, as it were, a part of the medicine, without making any alteration in the rest. Scammony in substance, judiciously managed, needs no corrector: if triturated with sugar, with almonds or with gum, as we have formerly recommended for other resinous purgatives, it becomes sufficiently safe and mild in

its operation. It may likewise be conveniently dissolved, by trituration, in a strong decoction of liquorice, and then poured off from the feces: the college of Wirtemberg assure us, that, by this treatment, it becomes mildly purgative, and is unattended with gripes, or other inconveniences; and that it likewise proves inoffensive to the palate. The common dose of scammony is from three to twelve grains.

Scammony gives name to three different compound powders, viz. the *Puleis scammonii compositus*, *Puleis scammonii compositus cum aloë*, and *Puleis scammonii cum calomelane*; and is an ingredient in the compound powder of senna, the compound extract of colocynth, and the pills of colocynth and aloes.

SCILLA [Lond. Ed.] Radix.

Scilla maritima Lin.

Squill, or sea onion; the root.

This is a sort of onion, growing spontaneously on dry sandy shores in Spain and the Levant, from whence the root is annually brought into Europe. It should be chosen plump, sound, fresh, and full of a clammy juice: some physicians have preferred the red sort, others the white, though neither deserves the preference to the other; the only difference perceivable between them is that of the colour; and hence both may be used promiscuously. This root is very nauseous, intensely bitter and acrimonious: much handled it ulcerates the skin. With regard to its medical virtues, it powerfully stimulates and consequently promotes expectoration, urine, and if the patient be kept warm, sweat: if the dose be considerable, it proves emetic, and sometimes purgative. The principal use of

this medicine is where the primæ viæ abound with mucous matter, and the lungs are oppressed by phlegm. Dr Wagner, in his clinical observations, recommends it given along with nitre, in hydropical swellings, and in nephritis; and mentions several cures which he performed, by giving from four to ten grains of the powder for a dose, mixed with a double quantity of nitre; he says that thus managed, it almost always operates as a diuretic, though sometimes it vomits or purges. In dropsy, dried squills are often combined with mercury. The most commodious form for the taking of squills, unless when designed as an emetic, is that of a bolus, or pill: liquid forms are to most people too offensive, though these may be rendered less disagreeable, both to the palate and stomach, by the addition of aromatic distilled waters. This root yields the whole of its virtues, both to aqueous and vinous menstrua, and to vegetable acids. The official preparations of it in our pharmacopœias are, a conserve, dried squills, a syrup, vinegar, an oxymel, and pills.

SCOLOPENDRIUM [Ed.]

Lingua Cereina

Alphitium Scolopendrium Lin.

Harts tongue; the leaves.

This plant consists of a number of long narrow leaves, without any stalk: it grows upon rocks and old walls, and remains green all the year. The leaves have a roughish, somewhat mucilaginous taste, like that of the maidenhair, but more disagreeable. They are recommended in obstructions, and for strengthening the tone of the viscera; and have sometimes been used for these intentions, either alone

alone, or in conjunction with maidenhair, or the other plants called *capillary*.

SCORDIUM [Lond. Ed.]

Herba.

Teucrium Scordium Lin.

Water-germander; the herb.

This is a small, somewhat hairy plant, growing wild in some parts of England, though not very common; the shops are generally supplied from gardens. It has a bitter taste, and a strong disagreeable smell. Scordium is of no great esteem in the present practice, notwithstanding the deobstruent, diuretic, and sudorific virtues, for which it was once celebrated. It formerly entered the mithridate, theriaca, and cataplasm of cummin seed, and gave name to two compound powders and an electuary; but it could by no means be considered as an article of great activity; and from such of these formulæ as are still retained, the scordium is rejected.

SEBESTENA [Brun.] Fructus.

Cordia Allaya Lin.

Sebestens.

These are a sort of plumb, the produce of a tree growing in the East Indies. The fruit is brought from thence in a dry state; it is of a dark or blackish brown colour, with whitish or ash coloured cups: the flesh sticks close to the stone, which contains sometimes one and sometimes two kernels. This fruit has a sweet, very glutinous taste: and hence has been employed in some kinds of hoarseness, and in coughs from thin sharp defluxions: at present it is not often met with in the shops.

SEDUM ACRE [Succ.] Herba recens.

Sedum acre Lin.

Wall-or Stone-crope, or pepper; the recent plant.

This species of the sedum is a small, perennial, succulent, plant, growing in great abundance on the tops of walls and roofs of houses. It has a faint smell, and at first an herbaceous taste; but it afterwards shews considerable acrimony, exciting a sense of biting heat in the mouth and fauces. In its recent state it shews very active powers, proving emetic, purgative, and diuretic. The expressed juice taken to the quantity of a table spoonful, has been said to prove a very drastic medicine: but the plant in its dried state shews little or no activity. In this country it is scarcely employed, and has no place in our pharmacopœias. Its activity, however, points it out as a subject deserving attention.

SENEKA [Lond. Ed.] Radix.

Polygala Senega Lin.

Seneka, or rattle-snake root.

Seneka grows spontaneously in Virginia, and bears the winters of our climate. This root is usually about the thickness of the little finger, variously bent and contorted, and appears as if composed of joints, whence it is supposed to resemble the tail of the animal whose name it bears; a kind of membranous margin runs on each side, the whole length of the root. Its taste is at first acid, afterwards very hot and pungent.

The Senegaro Indians are said to prevent the fatal effects of the bite of the rattle-snake, by giving it internally, and by applying it externally to the wound. It has

has been strongly recommended in pleuritis, peripneumonies, and other inflammatory disorders. Its more immediate effects are those of a diuretic, diaphoretic, and cathartic; sometimes it proves emetic: the two last operations may be occasionally prevented, by giving the root in small doses, along with some aromatic simple water, as that of cinnamon. The usual dose of the powder is thirty grains or more.

Some have likewise employed this root in hydropic cases, and not without success. There are examples of its occasioning a plentiful evacuation by stool, urine, and perspiration; and by this means removing the discale, after the common diuretics and hydragogues had failed: where this medicine operates as a cathartic, it generally proves successful.

SENNA [*Lond. Ed.*] *Folium. Cassia senna Lin.*

Senna; the leaf.

This is a shrubby plant cultivated in Persia, Syria, and Arabia; from whence the leaves are brought, dried and picked from the stalks, to Alexandria in Egypt; and thence imported into Europe. They are of an oblong figure, sharp pointed at the ends, about a quarter of an inch broad, and not a full inch long, of a lively yellowish green colour, a faint not very disagreeable smell, and a subacid, bitterish, nauseous taste. Some worse sorts are brought from Tripoli and other places: these may easily be distinguished by their being either narrower, longer, and sharper pointed, or larger, broader, and round pointed, with small prominent veins; or large and obtuse, of a fresh green colour, without any yellow cast.

H h

Senna is a very useful cathartic, operating mildly, and yet effectually: and, if judiciously dosed and managed, rarely occasioning the ill consequences which too frequently follow the exhibition of the stronger purges. The only inconveniences complained of in this drug are, its being apt to gripe, and its nauseous flavour. The gripping quality depends on a resinous substance, which, like the other bodies of this class, is naturally disposed to adhere to the coats of the intestines. The more this resin is divided by such matters as take off its tenacity, the less adhesive, and consequently the less irritating and griping it will prove; and the less it is divided, the more griping: hence senna given by itself, or infusions made in a very small quantity of fluid, gripe severely, and purge less than when diluted by a large portion of suitable menstruum, or divided by mixing the infusion with oily emulsions or with gum. The colleges, both of London and Edinburgh, have given several formulæ for the exhibition of this article; such as those of infusion, powder, tincture, and electuary. The dose of senna in substance, is from a scruple to a drachm; in infusion, from one to three or four drachms.

It has been customary to reject the pedicles of the leaves of senna, as of little or no use: Geoffroy however observes, that they are not much inferior in efficacy to the leaves themselves. The pods or seed vessels met with among the senna brought to us, are by the college of Brussels preferred to the leaves: they are less apt to gripe, but are proportionally less purgative.

SER-

SERPENTARIA VIRGINIANA [Lond. Ed.] Radix.

Arisaema Serpentaria Lin.

Virginia snake root; the root. This is a small, light, bushy root consisting of a number of strings or fibres, matted together, issuing from one common head;

of a brownish colour on the outside, and paler or yellowish within. It has an aromatic smell, like that of valerian, but more agreeable: and a warm, bitterish, pungent taste. This root is a warm diaphoretic and diuretic: it has been much celebrated as an alexipharmac, and esteemed one of the principal remedies in malignant fevers and epidemic discases, and also in cutaneous affections. It is given in substance in doses of from ten to thirty grains, and in infusion to a drachm or two. Both watery and spirituous menstrua extract its virtue by infusion, and elevate its flavour in distillation: along with the water a small portion of essential oil arises. A spirituous tincture is directed as an official preparation.

SERPYPHLLUM [Ed.] Summitates florentes.

Thymus Serpyllum Lin.

Mother of thyme; the flowering tops.

This is a small creeping plant, common on heaths and dry pasture grounds. Its taste, smell, and medical virtues are similar to those of thyme, but weaker.

SEVUM. See Ovis.

SIMAROUBA [Lond. Ed.] Cortex.

Quassia Simarouba Lin.

Simarouba; the bark.

This bark, with pieces of the wood adhering to it, is brought

from Guiana in South America, in long tough pieces of a pale yellowish colour, and a pretty strong bitter taste. A decoction of half a drachm is given for a dose, and repeated at intervals of three or four hours, in dysenteric fluxes.

It has also been used with advantage in some other instances of increased discharges, particularly in leucorrhœa. From its feebler qualities it may be concluded to be a gentle astringent.

SINAPI [Lond. Ed.] Semen.

Sinapis nigra Lin. [Lond.]

Sinapis alba Lin. [Ed.]

Mustard seed; black and white. These seeds obtained from different species of the mustard, differ very little from each other, excepting that the black is rather more pungent than the white.

This plant is sometimes found wild, but for culinary and medicinal uses it is cultivated in gardens or fields. Mustard, by its acrimony and pungency, is stimulating: and stands deservedly recommended for exciting appetite, promoting digestion, increasing the fluid secretions; and also in paralytic and rheumatic affections, and for the other purposes of the acrid plants called *antiscorbutic*. Some recommend it in the disease called *milreke* or *bellon*, to which sinclters are subject. It imparts its taste and smell in perfection to aqueous liquors, while rectified spirit extracts extremely little of either: the whole of the pungency arises with water in distillation. Committed to the press, it yields a considerable quantity of a soft insipid oil, perfectly void of acrimony: the cake left after the expression is more pungent than the

mustard was at first. The oil is directed as officinal by the London college. These seeds are sometimes employed externally in fomentations as a stimulant.

SIUM [Lond.] *Herba.*

Sium nodiflorum Lin.

Creeping skerrit, or water parsnip; the herb.

The London parmacopœia is the only modern one in which this article has at present a place. It is an indigenous vegetable in Britain, growing abundantly in rivers and ditches. It was formerly alleged to be not only a diuretic, but also an emmenagogue and lithontriptic. With these intentions, however, it is not now employed. Dr Withering mentions, that a young lady of sixteen years old was cured of an obstinate cutaneous disease by taking three large spoonfuls of the juice twice a-day; and he adds, that he has repeatedly given to adults three or four ounces every morning, in similar complaints. In such doses it neither affects the head, stomach, nor bowels. And children take it readily when mixed with milk.

SODA. See BARILLA.

SOLANUM LETHALE.

See BELLADONNA.

SPERMA CETI [Lond.]

Spermum Ceti crystallisatum

SEVUM CETI [Edin.] *Sper-*

ma Ceti.

Physeter macrocephalus Lin. [Ed.] Spermaceti.

Spermaceti is a peculiar animal fat obtained from the head of a species of whale. It is an unctuous flaky substance, of a snowy whiteness, a soft butyraceous taste,

and without any remarkable smell. The virtues of this concrete are those of a mild emollient: it is of considerable use in pains and erosions of the intestines, in coughs proceeding from thin sharp fluxions, and in general in all cases where the solids require to be relaxed, or acrimonious humours to be obtunded. For external purposes, it readily dissolves in oils; and for internal ones, it may be united with aqueous liquors into the form of an emulsion, by the mediation of almonds, gums, or the yolks of eggs. Sugar does not render it perfectly miscible with water; and alkalies, which change other oils and fats into soaps, have little effect on spermaceti. This drug ought to be kept very closely from the air; otherwise its white colour soon changes into a yellow, and its mild unctuous taste into a rancid and offensive one. After it has suffered this disagreeable alteration, both the colour and quality may be recovered again by steeping it in alkaline liquors, or in a sufficient quantity of spirit of wine.

SPIGELLA [Lond. Ed.] *Ra-*

dis

Spigelia marilandica Lin.

Indian pink; the root.

This plant grows wild in the southern parts of North America.

The roots are celebrated as an anthelmintic, particularly for the expulsion of lumbrici. Some order it in doses of ten or fifteen grains; and allege that it occasions nervous affections if given in larger doses; while others order it in drachm doses, alleging that the bad effects mentioned more readily happen from small doses, as the larger ones often purge

purge or puke; some prefer the form of infusion. An emetic is generally premixed; and its purgative effect assisted by some suitable additions.

SPINA CERVINA [Linde.]

Bacca.

RHAMNUS CATHARTICUS [Edin.] *Baccarum succus.*

Rhamnus catharticus Lin.

Buck thorn; the berries.

This tree, or bush, is common in hedges; it flowers in June, and ripens its fruit in September or the beginning of October. In our markets, the fruit of some other trees, as the black berry-bearing alder, and the dog-berry-tree, have of late often been mixed with or substituted for those of buck-thorn. This abuse may be discovered by opening the berries, those of buck-thorn have generally four seeds, the berries of the alder two, and those of the dog-berry only one. Buckthorn berries, bruised on white paper, give it a green tincture, which the others do not. Those who sell the juice to the apothecaries, are said to mix with it a large proportion of water.

Buckthorn berries have a faint disagreeable smell, and a nauseous bitter taste. They have long been in considerable esteem as cathartics: and celebrated in dropries, rheumatisms, and even in the gout: though in these cases they have no advantage above other purgatives, and are more offensive, and operate more severely, than many which the shops are furnished with: they generally occasion gripes, sickness, dry the mouth and throat, and leave a thirst of long duration. The dose is about twenty of the fresh berries in substance, and

twice or thrice this number in decoction; an ounce of the expressed juice, or a drachm of the dried berries. A syrup prepared from the juice is kept in the shops: in this preparation the nauseous flavour of the buckthorn is somewhat corrected by the sugar, and the addition of aromatics.

SPIRITUS CORNU CER.

VI; [Ed.] *Ammonie ex ossibus vol cornubus animalium parata, porio volatiliore liquida distillatione purificata ut decolor sit.*

Spirit of harts-horn.

This is the more volatile liquid part of the alkaline salt, obtained from the bones and horns of animals, well rectified by distillation so as to become colourless.

The volatile alkali, as got by distillation with a strong fire from any animal matter, from foot, &c. is, when pure, one and the same thing.

Of the mode of obtaining it we shall afterwards have occasion to speak, under the head of preparations, when we come to mention the *Liquor volatilis, sal, et oleum, cornu cervi*, which, although they derive their name from hartshorn, may be obtained from any animal substance, excepting fat.

As first distilled from the subject, this liquor is impregnated with oil, rendered fetid or empyreumatic by the process. The only volatile alkali has been chiefly prepared by distillation in large iron pots, with a fire increased by degrees to a strong red heat: a watery liquor rises first, then the volatile salt, along with a yellowish, and at length a dark reddish oil; a part of the salt dissolves in the water and forms the spirit, which is considerably separated from the oil by filtration

filtration through wet paper. It is rectified by repeated distillations with a very gentle heat. Greatest part of the salt always comes over before the water, a little of the salt is generally allowed to remain undissolved as a test of the strength of the spirit. However colourless the salt or spirit of hartshorn may be thus rendered; yet by keeping they become yellow and nauseous, owing to the quantity of oil which they still retain. The Edinburgh college order this article to be got from the manufacturer, rather than prepared by the apothecary himself, who cannot do it to any advantage.

The volatile alkali is got in its purest state from sal ammoniac. It is used externally, held to the nose, on account of its pungent odour, in cases of faintness and syncope; and mixed with unctuous matter as a rubefacient. It is used internally to obviate spasm in hysteria, torpor in hypochondriasis, and with a view to excite the vis vitæ.

It has also been said, that in some instances intermittents have been successfully cured by it, even after the Peruvian bark had failed. With this view, fifteen drops of the spirit are given in a tea cupful of cold spring water, and repeated five or six times in each intermission.

SPIRITUS VINOSUS REC-

TIFICATUS [Lond.] *Constinet alcoholis partes 95 et aquæ distillatæ partes 5 in partibus 100; hujus pondus specificum est ad pondus aquæ distillatæ ut 835 ad 1000.*

SPIRITUS VINOSUS REC-TIFICATUS sive PURISSIMUS [Ed.] *Spiritus distillatus ex vino vel aliis liquoribus fermentatis*

ab odore ingrato purificatus, cujus libra mensura sit ponderis unciarum decem.

Rectified spirit of wine. By the direction of the London college it is said to contain 95 parts of pure alcohol and 5 of water in the 100, and to be of the specific gravity of 835, water being 1000.

The Edinburgh college does not mention the quantity of alcohol which it contains, and determines its specific gravity by saying the pound measure of it ought to weigh ten ounces, i. e. its specific gravity is to that of water as 10 to 12 or as 833 $\frac{1}{3}$ to 1000.

The purification of the spirit is effected by one or more repeated distillations in a very gentle heat, with certain additions to keep down the phlegm and the gross oil, in which the ill flavour resides. These spirits, whatever vegetable subjects they have been produced from, are, when perfectly pure, one and the same. They have a hot pungent taste, without any particular flavour; they readily catch flame, and burn entirely away, without leaving any marks of an aqueous moisture behind: distilled by a heat less than that of boiling water, they totally arise, the last runnings proving as flavourless and inflammable as the first: they dissolve essential vegetable oils and resins into an uniform transparent fluid.

The uses of vinous spirits, as menstrua for the virtues of other medicines, will be mentioned hereafter. Pure spirit coagulates all the fluids of animal bodies, except urine, and it also hardens the solid parts. Applied externally, it strengthens the vessels, and thus may restrain passive hemorrhagies. It

It instantly contracts the extremities of the nerves it touches, and deprives them of sense and motion. Hence employing spirituous liquors in fomentations, notwithstanding the specious titles of vivifying, heating, restoring mobility, resolving, dissipating, and the like, usually attributed to them, may sometimes be attended with unhappy consequences. These liquors received undiluted into the stomach, produce the same effects, contracting all the solid parts which they touch, and destroying, at least for a time, their use and office: if the quantity be considerable, a palsy or apoplexy follows, which ends in death. Taken in small quantity, and duly diluted, they brace up the fibres, raise the spirits, and promote activity: if farther continued, the senses are disordered, voluntary motion destroyed, and at length the same inconveniences brought on as before. Vinous spirits, therefore in small doses, and properly diluted, may be applied to useful purposes in the cure of diseases, while in larger ones they act as a poison of a particular kind: And they generally prove deleterious from long continued use to such a degree as frequently to intoxicate.

SPIRITUS VINOSUS TENUIOR [*Lond.*] *Continet alcoholis partes 55, et aquæ distillatæ partes 45 in partibus 100. Hujus pondus specificum est ad pondus aquæ distillatæ ut 930 ad 1000.*

SPIRITUS VINOSUS TENUIOR, sive DILUTUS [*Ed.*] *Spiritus rectificatus cui immixta fuerit aquæ pars æqua, qualem lingua vernacula vocamus PROOF SPIRITS.*

Proof spirit of wine. It contains, according to the London

college, 55 parts of alcohol and 45 of distilled water in 100. Its specific gravity is to that of distilled water as 930 to 1000.

The Edinburgh college directs proof spirit to be made by mixing equal parts of water and rectified spirit.

The spirits usually called *proof*, are distilled from different fermented liquors, freed from their phlegm and ill flavour only to a certain degree. Their purity, with regard to flavour, may be easily determined from the taste, especially if the spirit be first diluted. It were to be wished that we had a certain standard with regard to their strength or the quantity of water contained in them; a circumstance which greatly influences several medical preparations, particularly the tinctures: for as pure spirit dissolves the resin and volatile oil, and water only the gummy and saline parts of vegetables, it is evident that a variation in the proportions wherein these are mixed, will vary the dissolving power of the menstruum, and consequently the virtue of the preparation; and from this circumstance, apothecaries would do better by preparing it themselves, according to the directions of the Edinburgh college than by purchasing it from dealers.

SPIRITUS VINOSUS TENUIOR [*Lond.*] *Continet alcoholis partes 55, et aquæ distillatæ partes 45 in partibus 100. Hujus pondus specificum est ad pondus aquæ distillatæ ut 930 ad 1000.*

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Proof spirit of wine. It contains, according to the London

SPONGIA [*Lond. Ed.*]

Spongia officinalis Lin.

Sponge.

Sponge is a soft, light, very porous and compressible substance, readily imbibing water, and distending thereby. It is found adhering to rocks, particularly in the Archipelago. It is generally supposed to be a vegetable production: but is in reality of animal origin, for

it yields the same principles with animal substances in general : volatile salt is obtained from it in larger quantity than from almost any animal matter, except the bags of the silk worm. On this salt seem to depend the virtues of the official *Spongia usta*, which has been strongly recommended in scrophulous affections ; and particularly celebrated for removing that large swelling of the neck, termed *bronchocèle*, which is probably of a scrophulous nature.

Crude sponge from its property of imbibing, and being distended by moisture, is sometimes used as a tent for dilating wounds ; and to fit it for these intentions the sponge is immersed in melted wax, and subjected to pressure till cool : In this state it may be easily formed into proper tents, so as to be introduced where necessary ; and from the gradual melting of the wax, in consequence of the heat of the part, a dilatation of course takes place.

It adheres strongly to the mouths of wounded vessels ; and when retained by proper compression, it has prevented considerable bleedings preferably to agaric, or puffsball.

STANNUM [Lond. Ed.] *Litura et Pulvis.*

The filings and powder of tin.

Tin is the lightest and most fusible of all metals. Heated, it becomes so brittle as to fall in pieces by a blow ; and by agitation (when just ready to melt) it is formed into a powder : hence the official method of pulverising this metal, to be described in its place. The proper menstruum of tin is aqua regia. Vegetable acids likewise dissolve it in considerable quantity, though it has long been supposed

not to be at all soluble in them, unless previously well calcined.

This metal was formerly accounted a specific in disorders of the uterus and lungs ; a calx of tin and antimony is still retained in some dispensatories, under the name of an *antibetic* : but these are virtues to which it certainly has little claim. It has been celebrated as an anthelmintic : and is said to destroy some kinds of worms which elude the force of other medicines, particularly the *tenia* : possibly the cause of this effect may be from an admixture of a portion of arsenic. Tin has a strong affinity with arsenic : inasmuch, that when once united therewith, the arsenic, notwithstanding its volatility in other circumstances, cannot be totally expelled, either by slow calcination or by a vehement fire. Almost all the ores of tin contain more or less of this poisonous mineral, which is not entirely separable in the common processes by which the ores are run down, or the metal farther purified. Filings of tin held in the flame of a candle, emit a thick fume, smelling of garlic : which smell is universally held in mineral substances to be a criterion of arsenic. Mr Henckel has discovered a method of separating actual arsenic, from tin, by solution in aqua regia and crystallisation. Mr Margraff has given a farther account of this process : and relates, that from the tins usually reputed pure, he has obtained one eighth of their weight of crystals of arsenic.

But notwithstanding these observations, *stannum pulverisatum*, afterwards to be mentioned, is every day taken internally with perfect impunity, even in ounce doses, although, unless in cases of *tenia*, it

is in general employed in much smaller doses.

STAPHISAGRIA [Lond.
Ed.] Semen.

Delphinium Staphisagria Lin.

Staveacre; the seeds.

These are large rough seeds, of an irregularly triangular figure, of a blackish colour on the outside, and yellowish or whitish within: they are usually brought from Italy; the plant is not very common in this country, though it bears our severest colds. They have a disagreeable smell, and a very nauseous, bitterish, burning taste. Staveacre was employed by the antients as a cathartic; but it operates with so much violence both upwards and downwards, that its internal use has been among the generality of practitioners, for some time laid aside. It is chiefly employed in external applications, for some kinds of cutaneous eruptions, and for destroying lice and other insects; indeed, that from this virtue it has received its name, in different languages; *herba pedicularis*, *herbe aux poux*, *lauskraut*, *loufsewort*, &c.

STIBIUM. See ANTIMONIUM.

STÆCHAS, [Brun.] Flos.

Larentula stæchas Lin.

Arabian stæchas, or French lavender flowers.

This is a shrubby plant, considerably smaller than the common lavender. The flowery heads are brought from Italy and the southern parts of France: they are very apt to grow mouldy in the passage; and even when they escape this inconvenience, are gene-

rally much inferior to those raised in our gardens. The best stæchas which we receive from abroad, has no great smell or taste: Pomet affirms, that such as the shops of Paris are supplied with is entirely destitute of both; while that of our own growth, either when fresh or when carefully dried, has a very fragrant smell, and a warm, aromatic, bitterish, subacid taste: distilled with water, it yields a considerable quantity of a fragrant essential oil: to rectified spirit it imparts a strong tincture, which inspissated proves an elegant aromatic extract. This aromatic plant is rarely met with in prescription: the only official compositions into which it was admitted, were the mithridate and theriaca.

There is another sort called *stæchas*, which from the beauty and durability of its flowers has of late years had a place in our gardens, and whose aromatic qualities render it worthy of attention; this is the *Gnaphalium arenarium* Lin. the golden stæchas, goldilocks, or yellow cassidony; its flowers stand in umbels on the tops of the branches; they are of a deep shining yellow colour, which, when they are properly dried, they retain in perfection for many years; their smell is fragrant and agreeable, somewhat of the musky kind; their taste warm, pungent, and subastringent: they impart their flavour to water in distillation, and by infusion to rectified spirit.

STRAMONIUM [Ed.] Herba.

Datura Stramonium Lin.

Thorn apple; the herb.

The stramonium was commonly

con-

considered as a strong narcotic poison; but has been highly recommended to the attention of practitioners by Dr Stoerk of Vienna. It grows indigenous in some parts of Britain, among rubbish and on dung-hills. It has been used internally, under the form of an extract or inspissated juice from the leaves. This extract has been chiefly employed in maniacal cases; and when given in doses of from one to ten grains or upwards in the course of the day, it has been alleged to be attended with surprising effects, on the authority not only of Dr Stoerk, but of Dr Odhelius, Dr Wedenberg, and others. Dr Odhelius in particular informs us, that of fourteen patients to whom he gave it, eight were completely cured, five were relieved, and one only received no benefit. We have not, however, heard of its being equally successful in Britain; and it is here so little employed as to have still no place in the pharmacopœia of the London college. It certainly deserves the attention of practitioners, and well merits a trial, in affections often incurable by other means. The powder of the leaves or seeds promises to furnish a more certain or convenient formula than the inspissated juice. Besides maniacal cases, the stramonium has been also employed, and sometimes with advantage, in convulsive and epileptic affections. It is not only taken internally, but has also been used externally. An ointment prepared from the leaves of the stramonium has been said to give ease in external inflammations and in hæmorrhoids.

STYRAX CALAMITA

[*Lond. Ed.*] *Resina.*

I i

Styrax officinalis Lin.

Storax.

This is an odoriferous resinous substance, exuding from a tree growing in the warmer climates.

It has been customary to distinguish three sorts of storax, though only one is usually met with in the shops.

1. *Styrax calamita*, or *storax in the cane*, so called from its having been formerly brought inclosed in reeds from Pamphylia. It is either in small distinct tears of a whitish or reddish colour, or in large masses composed of such.

2. *Storax in the lump* or *red storax*. This is in masses of an uniform texture, of a yellowish red or brownish colour; though sometimes likewise interspersed with a few whitish grains. Of this sort there has been some to be lately met with in the shops under the name of *storax in the tear*.

3. The common *storax* of the shops is in large masses, considerably lighter and less compact than the foregoing: it appears on examination to be composed of a fine resinous juice, mixed with a quantity of saw dust. For what purpose this addition is made, is difficult to say, but it can scarcely be supposed to be done with any fraudulent view, since the saw-dust appears at sight. This common storax is much less esteemed than the two first sorts; though, when freed from the woody matter, it proves superior in point of fragrance to either of them. Rectified spirit, the common menstruum of resins, dissolves the storax, leaving the wood behind; nor does this tincture considerably lose its valuable parts on being inspissated to a solid consistence; while aqueous liquors elevate almost

almost all the fragrantcy of the storax.

Storax is one of the most agreeable of the odoriferous resins and may be exhibited to great advantage in languors, and in debilities of the nervous system; it is not, however, much used in modern practice.

STYRAX LIQUIDA [Dan.]

Liquidambra Syriaciflua Lin.
Liquid storax.

The genuine liquid storax, according to Petiver's account, is obtained from a tree growing in the island Cobros in the Red Sea: the preparers of this commodity yearly clear off the bark of the tree, and boil it in sea-water to the consistence of bird lime; the resinous matter which floats on the surface is taken off, liquified in boiling water, and passed through a strainer. The purer part which passes through, and the more impure which remains on the strainer, and contains a considerable portion of the substance of the bark, are both sent to Moco; from whence they are sometimes, though very rarely, brought to us. The first is of the consistence of honey, tenacious, of a reddish or ash brown colour, an acrid unctuous taste; and approaches in smell, to the solid storax, but so strong as to be disagreeable: the other is full of woody matter, and much weaker in smell.

The genuine liquid storax is even at Moco a rare commodity and sold at a very high price, and it has seldom entered the shops of other apothecaries. A resinous juice, possessing somewhat of the same sensible qualities, brought from the Spanish provinces in South America, and perhaps the product of the same tree, is some-

times sold in place of it. But much more frequently what we meet with under this name is an artificial compound of solid storax, common resin, wine, and oil, beat up together to a proper consistence. Concerning the real virtues of liquid storax, observations are altogether wanting: hence the London and Edinburgh colleges have expunged it from the catalogue of officinals.

SUCCINUM [Lond. Ed.]

Amber.

This is a solid, brittle, bituminous substance, dug out of the earth, or found upon the sea-shores: the largest quantities are met with along the coasts of Polish Prussia and Pomerania. It is of a white yellow, or brown colour, sometimes opaque, and sometimes very clear and transparent. The dark coloured and opaque sorts, by digestion with certain expressed oils and animal fats, become clearer, paler coloured, more pellucid, and considerably harder. Amber boiled in water, neither softens nor undergoes any sensible alteration: exposed to a greater heat, without addition, it melts into a black mass like some of the more common bitumens: set on fire, its smell resembles that which arises from the finer kinds of pitch: distilled in a retort, it yields an oil and a volatile acidulous salt.

Amber in substance has very little smell or taste; and hence it has by some been reckoned a mere inactive earthy body. It was formerly accounted an absorbent, and as such had a place in the compound powder of crabs-claws: it certainly has no title to this class of medicines, as not being acted

on by any acid. It is supposed to be of service in the fluor albus, gleet, hysteric affections, &c; and with these intentions is sometimes given in the form of impalpable powder, to the quantity of a drachm. A tincture of amber made in rectified spirit, to which it imparts a bitterish aromatic taste and a fragrant smell, promises to be of service in these disorders. Boerhaave extols this tincture as having incredible efficacy in all those distempers which proceed from weakness and relaxation, and in hypochondrical, hysteric, and cold languid cases. If part of the spirit be abstracted by a gentle heat, the remainder proves a very elegant aromatic balsam, which is perhaps one of the most useful preparations obtainable from this concrete.

Amber in the state of powder formerly entered several official compositions, from all which it is now rejected: but it is the basis of an oil and salt to be afterwards mentioned among the preparations which are sometimes used in the state in which they are at first obtained, but more frequently in a purified or rectified state.

SULPHUR [Lond.]

SULPHURIS FLORES

[Lond. Ed.] *Sulphur sublimatum.*

Sulphur; and flowers of sulphur.

Sulphur, or brimstone, is a yellow substance, of the mineral kingdom, fusible in a small degree of heat, totally volatile in a stronger, readily inflammable, burning with a blue flame, which is accompanied with a suffocating acid fume. It dissolves in alkaline liquors and in oils; not in acids, water, or vitreous spirits.

It is usually brought to us in

large irregular masses, which are afterwards melted and cast into cylindrical rolls with the addition of some coarse resin, flour, or the like; whence the paler colour of the rolls. Sulphur is frequently found native in the earth, sometimes in transparent pieces of a greenish or bright yellow colour; but more commonly in opaque grey ones, with only some streaks of yellow. This last is the sort which is called *sulphur vivum*; though that met with under this name in the shops, is no other than the dross remaining after the sublimation of Sulphur. All the sorts of sulphur are, when perfectly pure, in no respect different from each other. Notwithstanding the preference given by some to the more uncommon fossil sorts, these last are the least proper for medicinal purposes, as being the most subject to an admixture of foreign matter both of the metallic and arsenical kind.

Pure sulphur loosens the belly, and promotes insensible perspiration: it passes through the whole habit, and manifestly transpires through the pores of the skin, as appears from the sulphureous smell of persons who have taken it, and from silver being stained in their pockets of a blackish colour, which is the known effect of sulphureous fumes. It is a celebrated remedy against cutaneous diseases, both given internally and applied externally. It has likewise been recommended in coughs, asthmas, and other disorders of the breast and lungs; and particularly in catarrhs of the chronic kind. But probably, the benefit derived from it in these cases, is principally, if not entirely, to be attributed to its operation as a gentle laxative; and with this

intention.

intention it is frequently used with great advantage in hæmorrhoidal affections, and many other diseases in which it is proper to keep the belly gently open. Though sulphur be not soluble in water, yet boiling water poured upon it in a close vessel, obtains some impregnation. This water has by some been highly extolled as a very effectual remedy for preventing returns of gout and rheumatism.

The common dose of sulphur rarely exceeds a scruple, though Geoffroy goes as far as two drachms.

Sulphur is the basis of two formulæ in our pharmacopœias, troches and an ointment: the former intended for internal use, the latter to be employed externally.

It is remarkable of this substance that though a medicine of considerable efficacy, it nevertheless restrains that of some others of the most powerful kind. Mercury and regulus of antimony are rendered, by the admixture of sulphur, inactive. Hence, when antimonial and mercurial medicines exceed in operation, sulphur has been given for abating their violence: but the influence it has probably depends on its operating as a gentle laxative.

SUS ADEPS [*Lond.*] AXUNGIA PORCINA [*Edin.*]

Sus scrofa Lin.

Hogs-lard.

In hogs-lard we have a very pure animal fat, almost entirely free from any peculiar impregnation, and of a soft consistence. Hence it is a very useful emollient for relaxing those parts to which it is applied; and it is also a very

convenient article for giving the proper consistence to ointments, plasters, and liniments. Indeed this, and the sebum ovillum or mutton suet, are the only fats now retained by the London and Edinburgh Colleges, although formerly more than twenty different fats entered some lists of the materia medica. Each particular fat was then supposed to possess peculiar properties; but for this there was probably no foundation: even those retained are now less employed than before, as it has been imagined that a proper consistence of any kind may be more certainly obtained by determined proportions of wax and oil; but as these articles are more expensive, hogs-lard and mutton suet are often substituted for them by the apothecaries.

TACAMAHACA [*Bras.*] *Resina.*

Populus balsamifera Lin.

Tacamahaca; the resin.

This resinous substance is obtained from a tall tree, which grows spontaneously on the continent of America, and in a sheltered situation bears the winters of our climate. Two sorts of this resin are sometimes to be met with. The best, called from its being collected in a kind of gourd-shells, *tacamahaca in shells*, is somewhat unctuous and softish, of a pale yellowish or greenish colour, an aromatic taste, and a fragrant delightful smell, approaching to that of lavender and ambergris. This sort is very rare; that commonly found in the shops is in semitransparent grains or globes, of a whitish, yellowish, brownish, or greenish colour, of a less grateful smell than the foregoing. The first is said to exude from the fruit of the tree,

tree, the other from incisions made in the trunk. This resin is employed among the Indians, externally, for discussing and maturing tumours, and abating pains and aches of the limbs. The fragrance of the finer sort sufficiently points out its being applicable to different purposes.

TAMARINDUS [Lond. Ed.]

Fructus.

Tamarindus indica Lin.

Tamarinds ; the fruit.

Tamarinds are the fruit of a tree growing in the East and West Indies. It resembles a bean pod, including several hard seeds, together with a dark coloured viscid pulp of a pleasant taste: the East India tamarinds are longer than the West India sort ; the former containing six or seven seeds each, the latter rarely above three or four. The pulp of these fruits, taken in the quantity of from two or three drachms to an ounce or more, proves gently laxative and purgative ; and at the same time, by its acidity, quenches thirst, and allays immoderate heat. It increases the action of the purgative sweets, cassia and manna, and weakens that of the resinous cathartics. Some have supposed it capable of abating the virulence of antimonial preparations : but experience shews that it has rather a contrary effect, and that all vegetable acids augment their power. Tamarinds are an ingredient in the electuary of cassia, the lenitive electuary, and decoction of tamarinds with senna.

TANACETUM [Lond. Ed.]

Flos, herba.

Tanacetum vulgare Lin.

Tansy ; the flower and herb.

Tansy grows wild by road sides and the borders of fields, and is frequently also cultivated in gardens both for culinary and medicinal uses : it flowers in June and July. Considered as a medicine, it is a moderately warm bitter, accompanied with a strong, not very disagreeable flavour ; some physicians have had a great opinion of it in hystERIC disorders, particularly those proceeding from a deficiency or suppression of the uterine purgations. The leaves and seeds have been of considerable esteem as anthelmintics ; the seeds are less bitter, and more acrid and aromatic than those of rue, to which they are reckoned similar ; or of fantonicum, for which they have been frequently substituted.

An infusion of tansy, drank in a manner similar to tea, has been strongly recommended as a preventative of the return of gout.

THAPSUS BARBATUS.

See VERBASCUM.

TARAXACUM [Lond. Ed.]

Radix, herba.

Leontodon Taraxacum Lin.

Dandelion : the leaves and root.

This plant is very common in grass fields and uncultivated places. The root, leaves, and stalk, contain a large quantity of a bitter milky juice. There is reason to believe that they possess very considerable activity ; and with that intention they have sometimes been employed with success. Bocrhaave esteems them capable, if duly continued, of opening very obstinate obstructions of the viscera. A spirit obtained from them by distillation, after previous fermentation, has been strongly recommended by Professor Delius of Erlangen

in asthmatic disorders, in coughs, proceeding from glandular obstructions, and in hydropic affections.

TARTARI CRYSTALLI [Ed.] *Tartarum purificatum.*

Tartar is a saline substance, consisting of the vegetable alkali super-saturated with acid. It is thrown off from wines to the sides and bottom of the cask: In this state it is mixed with earthy, oily, and colouring matter: and when it has a deep brown colour, as that from red wine, it is commonly called *red*, and when of a paler colour *white tartar*. It is purified by dissolving it in boiling water, and separating the earthy part by filtering the boiling solution. On cooling the solution, it deposes irregular crystals, containing the oily and colouring matters, which are separated by boiling the mass with a white clay. The tartar thus purified, is called when crystallised *crystals of tartar*, and when in powder *cream of tartar*. If tartar be exposed to a red heat, its acid flies off; and what remains is the vegetable alkali, or salt of tartar. If we add lime to a boiling solution of pure tartar, the lime falls down with the acid, in the form of an insoluble precipitate, and the alkali remains dissolved in the water. To this precipitate well washed, diluted vitriolic acid is added; which having a stronger attraction for the lime than the acid of tartar has, takes hold of the lime with which it forms an insoluble compound, and the acid of tartar is held dissolved in the water. This acid may be had in a solid crystalline form by evaporating the water.

The virtues of tartar are those of a mild, cooling, aperient, laxative medicine. It is much used

in dropsy; and some allege that it has good effects as a deobstruent. From half an ounce to an ounce of it proves a gentle though effectual purgative: *Angelus Sala* relates, that he was cured of an habitual colic by purging himself a few times with six drachms of the crude tartar, after many other medicines had been tried in vain.

The crystals of tartar are in daily use, merely by themselves, either taken in powder or dissolved in water; and there are perhaps few medicines more commonly employed.

This salt is an ingredient in the compound infusion of fenna, compound powders of fenna, of jalap, and of scammony: and it is used for dissolving or corroding some metallic bodies, particularly antimony, from which it receives a strong emetic impregnation, as in the preparation formerly called *emetic tartar*, but now more properly styled *antimonium tartarizatum*.

TEREBINTHINA.

Turpentine.

The turpentine is resinous juices extracted from trees of the pine-tribe. Four kinds of it are distinguished in the shops.

TEREBINTHINA CHIA

[*Lond*] *Pistacia Terebinthus* Lin.

Chian, or Cyprus turpentine.

This juice is generally about the consistence of thick honey, very tenacious, clear, and almost transparent, of a white colour, with a cast of a yellow, and frequently of blue: it has a warm, pungent, bitterish taste: and a fragrant smell, more agreeable than any of the other turpentine.

The turpentine brought to us, is extracted in the islands whole

names

names it bears, by wounding the trunk and branches a little after the buds have come forth ; the juice issues limpid, and clear as water, and by degrees thickens into the consistence in which we meet with it. A like juice exuding from this tree in the eastern countries, inspissated by a slow fire, is of frequent use as a masticatory among the Persian ladies, who, as Kœmpfer informs us, are continually chewing it, in order to soften and whiten the teeth, sweeten the breath, and promote appetite.

TEREBINTHINA VENTRATA. [*Ed.*] *Resina et oleum essentialis.*

Pinus Larix Lin.

Venice turpentine.

This is usually thinner than any of the other sorts, of a clear, whitish, or pale yellowish colour, a hot, pungent, bitterish, disagreeable taste, and a strong smell, without any thing of the fine aromatic flavour of the Chian kind.

What is usually met with in the shops, under the name of *Venice turpentine*, comes from New England ; of what tree it is the product, we have no certain account : the finer kinds of it are in appearance and quality not considerably different from the true sort above described.

TEREBINTHINA ARCENTORATENSIS.

Straßburg turpentine.

This, as we generally meet with it, is of a middling consistence between the two foregoing, more transparent, and less tenacious than either ; its colour a yellowish brown. Its smell is very fragrant, and more agreeable than that of

any of the other turpentine, except the Chian ; in taste it is the bitterest, yet the least acrid.

TEREBINTHINA VULGARIS [*Lond.*]

Pinus Abies Lin.

Common turpentine.

This is the coarsest, heaviest, and in taste and smell the most disagreeable of all the sorts : it is about the consistence of honey, of an opaque brownish white colour.

It is obtained from the white fir, common in different parts of Europe. This tree is extremely resinous, and remarkably subject to a disease from a redundancy and extravasation of its resin, in so much, that without due evacuation it swells and bursts. The juice as it issues from the tree is received in trenches made in the earth, and afterwards freed from the grosser impurities by colature through wicker baskets.

All these juices yield in distillation with water an highly penetrating essential oil ; a brittle resin remaining behind. With regard to their medical virtues, they promote urine, cleanse the urinary passages and deterge internal ulcers in general ; and at the same time, like other bitter hot substances, strengthen the tone of the vessels : they have an advantage above most other acrid diuretics that they gently loosen the belly. They are principally recommended in pteets, the fluor albus, and the like ; and by some in calculous complaints : where these last proceed from the sand or gravel, formed into a mass by viscid mucous matter, the turpentine, by dissolving the mucus, promote the expulsion of the sand ; but where

a calculus is formed, they can do no service, and only ineffectually irritate or inflame the parts. It all cases accompanied with inflammation, these juices ought to be abtained from, as this symptom is increased, and frequently occasioned, by them. It is observable, that the turpentine impart, soon after taking them, a violet smell to the urine; and have this effect though applied only externally to remote parts: particularly the Venice fort. This is accounted the most powerful as a diuretic and detergent; and the Chian and Stralsburgh as corroborants. The common turpentine, as being the most offensive is rarely given internally; its principal use is in plasters and ointments among farriers, and for the distillation of the oil, or spirit, as it is called. The dose of these juices is from a scruple to a drachm and a half; they are most commodiously taken in the form of a bolus, or dissolved in watery liquors by the mediation of the yolk of an egg or mucilage. Of the distilled oil, a few drops are a sufficient dose; this is a most potent, stimulating, detergent diuretic, oftentimes greatly heats the constitution, and requires the utmost caution in its exhibition. Taken internally when mixed with honey, it has been alleged to prove a powerful remedy in obstinate rheumatic cases, particularly in ichthias.

TERRA JAPONICA. See CATECHU.

THEA [Brun.] *Folium.*

Thea bohea et viridis Lin.

Tea the leaf.

The several sorts of tea met with among us, are varieties of two species of trees the one called Green

and the other Bohea. The taste of both sorts is slightly bitterish, subastringent, and somewhat aromatic. The medical virtues attributed to these leaves are sufficiently numerous, though few of them have any just foundation: little more can be expected from the common infusions than that of a diluent, acceptable to the palate and stomach: the diuretic, diaphoretic, and other virtues for which they have been celebrated, depend more on the quantity of warm fluid, than any particular qualities which it gains from the tea. Nothing arises in distillation from either sort of tea with refined spirit; water elevates the whole of their flavour.

Good tea, in a moderate quantity, seems to refresh and strengthen; but if taken in considerable quantity, its use is apt to be succeeded by weakness and tremors, and other similar consequences resulting from the narcotic vegetables. Yet it is highly probable, that many of the bad, as well as good, effects said to result from it, are the consequences of the warm water.

THUS MASCULUM, see OLIBANUM.

THUS [Lond.] *Resina.*

Common frankincense.

This is a solid, brittle resin, brought to us in little globes or masses of a brownish or yellowish colour on the outside, internally whitish or variegated with whitish specks, of a bitterish, acrid, not agreeable taste, without any considerable smell. It is supposed to be the produce of the pine tree which yields the terebinthina communis; and to concrete on the surface of the terebinthinate juice

soon after it has issued from the plant. It gives name to one plaster, the *emplastrum Iburis*, and is a principal ingredient in another, the *emplastrum Iadani*.

THYMUS [Ed.] *Herba.*

Thymus vulgaris Lin.

Common thyme; the herb.

This plant is frequent in our gardens, and flowers in June and July. It has an agreeable aromatic smell, and a warm pungent taste, which it imparts by infusion to rectified spirit, and sends over in distillation with water: along with the water an essential oil, extremely hot and pungent, also arises. This oil is often sold in the shops for that of origanum. It frequently gives ease in cases of odontalgia, when topically applied to a caries tooth.

TILIA [Succ.] *Flaves.*

Tilia europæa Lin.

The lime, or linden tree; its flowers.

The lime tree has been much valued on account of its quick growth and pleasant shade; it flowers in July, and loses its leaves soon after. The flowers are chiefly used on account of their agreeable flavour, which water extracts from them by infusion, and elevates in distillation. Among the writers on the materia medica, they have the character of an antiepileptic, and a specific in all kinds of spasms and pains. Frederick Hoffman relates, that he knew a chronic epilepsv cured by the use of an infusion of these flowers drank as tea.

TINCAL. See BORAX.

TORMENTILLA [Lond.

Ed.] *Radix.*

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Tormentilla brevis Lin.

Tormentil, or septfoil; the root.

Tormentil is found wild in woods and on commons: it has long slender stalks, with usually seven long narrow leaves at a joint; the root is for the most part crooked and knotty, of a blackish colour on the outside, and a reddish within. This root has an austere styptic taste, accompanied with a slight kind of aromatic flavour; it is one of the most agreeable and efficacious of the vegetable astringents, and is employed with good effect in all cases where medicines of this class are proper. It is more used, both in extemporaneous prescription and in official composition, than any of the other strong vegetable astringents: it is an ingredient in the London compound powder of chalk. A tincture made from it with rectified spirit possesses the whole astringency and flavour of the root, and loses nothing of either in inspissating.

TRAGACANTHA, [Lond.

Ed.] *Gummi.*

Astragalus Tragacanthicus Lin.

Gum tragacanth.

The gum tragacanth is obtained from a thorny bush growing in Crete, Asia, and Greece. This gum is of a much stronger body than gum arabic, and does not so perfectly dissolve in water. A drachm will give to a pint of water the consistence of a syrup, which a whole ounce of gum arabic is scarcely sufficient to do. Hence its use for forming troches, and the like purposes, in preference to the other gums. It gives name to an official powder, and is an ingredient in the compound powder of cerus.

TRI.

TRICHOMANES [Ed.] Herba.

Asplenium Trichomanes Lin.

Maidenhair; the herb.

This is one of the herbs called, from the smallness of their stalks, capillary: it is found wild in different parts of Britain, upon old walls, and in shady places. The leaves have a mucilaginous, sweetish, subastringent taste, without any particular flavour; they are esteemed useful in disorders of the breast, and are supposed to promote the expectoration of tough phlegm, and to open obstructions of the viscera. They are usually directed in infusion or decoction, with the addition of a little liquorice. A syrup prepared from them, though it has now no place in our pharmacopœias, is frequently to be met with in our shops, under the name of Capillaire. A little of this syrup mixed with water makes a very pleasant draught. The syrup brought from abroad has an admixture of orange-flower water.

TRIFOLIUM PALUDOSUM [Lond.] Herba. MENYANTHES [Edin.]

Folia.

Menyanthes trifoliata Lin.

Buck-bean, or marsh trefoil; the herb.

This plant grows wild in moist marshy places; it has three oval leaves, standing together upon one pedicle which issues from the root; their taste is very bitter, and somewhat nauseous. Marsh trefoil is an efficacious aperient and deobstruent, promotes the fluid secretions, and if liberally taken, gently loosens the belly. Some recommend it in scrophulous and other ill-conditioned ulcers; inveterate cutaneous diseases have been

removed by an infusion of the leaves drank to the quantity of a pint a day at intervals, and continued for some weeks. Boerhaave relates, that he was relieved of the gout by drinking the juice mixed with whey.

TRITICUM [Lond.] Farina, amylum.

Triticum hybernium Lin.

Wheat; the flour and starch.

Wheat, a common article of food, is more nutritious than most other kinds of grain. The flour, or the starch prepared from it, form with water a soft viscid substance, which has been taken with good success in diarrhoeas and dysenteries. Starch is an ingredient in the compound powder of gum tragacanth, and the white pectoral troches, which are now more properly styled starch troches.

Bran contains besides the husks or shells of the wheat, a portion of its farinaceous matter. This is less glutinous than the flour, and is supposed to have a detergent quality. Infusions of bran are not unfrequently employed with this intention externally, and sometimes likewise taken internally.

Bread, carefully toasted, and infused, or slightly boiled in water, imparts a deep colour, and a sufficiently agreeable restraining taste. This liquor, taken as common drink, has done good service in a weak lax state of the stomach and intestines; and in bilious vomiting and purging, or the cholera morbus. Examples are related in the Edinburgh Essays of several cases of this kind cured by it, without the use of any other medicine. It is also a very common and a very proper drink

drink in discharges of the febrile kind.

When a farinaceous powder is steeped in cold water and strained through a cloth, a glutinous part remains in the cloth, which some suppose to be the nutrient principle, as it is quite similar to animal jelly; a starch passes through with the water, settles at the bottom, and a sweet mucilage is kept dissolved in the water. It is probably the just proportion of these three ingredients in wheat which gives that grain a preference in diet over the rest. The gluten is insoluble in water; but when mixed with the other two, and seasoned with salt, and in that state made to ferment by yeast or leaven, and this fermentation checked by the heat of the oven, the ingredients become so intimately united, that they cannot be separated; the viscosity of the gluten is diminished, and the whole thus forms a very soluble and nutritious bread.

TURPETHUM [Brun.] Ra-

ditu cortex.

Convolvulus Turpethum Lin.

Turbith; the cortical part of the root.

The cortical part of this root is brought to us in oblong pieces, of a brown or ash-colour, on the outside, and whitish within. The best is ponderous, not wrinkled, easy to break, and discovers a large quantity of resinous matter to the eye: its taste is at first sweetish; chewed for a little time, it becomes acrid, pungent, and nauseous. This root is a cathartic, not of the safest or most certain kind. The resinous matter, in which its virtue resides, appears to be very unequally distributed, inasmuch that a scruple of

some pieces purge violently, while larger doses, of other pieces have scarce any effect at all. An extract made from the root is more uniform in strength, though not superior, or equal, to purgatives more common in the shops.

TUSSILAGO [Lond. Ed.]

Herba, flores.

Tussilago Farfara Lin.

Colt's foot; the herb and flowers.

This grows wild in watery places, producing yellow flowers in February and March; these soon fall off, and are succeeded by large roundish leaves, hairy underneath: their taste is herbaceous, somewhat glutinous, and subacid. Tussilago stands recommended in coughs, phthisis, and other disorders of the breast and lungs, and some use it in scrophula. It is chiefly directed to be taken with milk; and upon this probably, more than on the tussilago itself, any benefit derived from it in practice is to be explained.

TUTIA [Ed.]

Tutty.

This is an impure sublimate of zinc, or an argillaceous substance impregnated therewith, formed into tubulous pieces like the bark of a tree. It is moderately hard and ponderous; of a brownish colour, and full of small protuberances on the outside, smooth and yellowish within; some pieces have a bluish cast, from minute globules of zinc being thrown up by the heat in its metallic form. Tutty is celebrated as an ophthalmic, and frequently employed as such in unguents and collyria: it gives name to an officinal ophthalmic ointment.

VAL.

VALERIANA SYLVES-

TRIS [Lond. Ed.] Radix,

Valeriana officinalis Lin.

Wild valerian; the root.

This root consists of a number of strings or fibres matted together, issuing from one common head; of a whitish or pale brownish colour; its smell is strong, like a mixture of aromatics with fetids; the taste unpleasantly warm, bitterish, and subacrid. There is a wild valerian, with broader leaves, of a deeper and shining green colour, met with in watery places. Both sorts have been used indiscriminately; and Linné has joined them into one species: but the first is considerably the strongest, and loses its quality if transplanted into such soils as the other naturally delights in. The roots, produced in low watery grounds, have a remarkable faint smell in comparison of the others, and sometimes scarcely any at all. The roots taken up in autumn or winter, have also much stronger sensible qualities than those collected in spring and summer. Wild valerian is a medicine of great use in nervous disorders, and is particularly serviceable in epilepsies, proceeding from a debility of the nervous system. It was first brought into esteem in these cases by Fabius Columna; who by taking the powdered root in the dose of half a spoonful, was cured of an inveterate epilepsy, after many other medicines had been tried in vain. Repeated experience has since confirmed its efficacy in this disorder; and the present practice lays considerable stress upon it. It can, however, by no means be represented as uniformly, or even frequently, successful, and that too although employed in very large doses.

In the Edinburgh Dispensary, in cases of epilepsy in which there was no evidence of local affection, it has been given to the extent of two ounces a day without effect.

Some authors recommend it as useful in procuring sleep, particularly in fever, even when opium fails. But it is principally useful in affections of the hysterical kind.

The common dose is from a scruple to a drachm in powder; and in infusion, from one to two drachms. Its unpleasant flavour is most effectually concealed by a suitable addition of mace.

A tincture of valerian in proof, and in volatile spirit, are kept in the shops.

VERATRUM. See HELLBORUS ALBUS.

VERBASCUM [Ed.] *Fr*

*lium.**Verbascum Thapsus* Lin.

Mullein; the leaf.

This plant is met with by roadsides and under hedges. It is clothed with soft downy leaves, and produces long spikes of yellow flowers in July. To the taste it manifests a glutinous quality, and has been recommended as an emollient. Some hold it in esteem in consumptions, others have recommended it strongly in dysenteric affections; but most practitioners are disposed to put little dependence on it in either. It has sometimes, although perhaps still less frequently, been employed externally in ill conditioned ulcers.

VINCETOXICUM [Lond.]

Radix.

A. h. p.

Adonis Vincetoxicum Lin.

Swallow wort, or tame poison;
the root.

This is a native of the warmer climates; it is sometimes met with in our gardens, but rarely perfects its seeds. The root has a strong smell, especially when fresh, approaching to that of valerian, or hard; the taste is at first sweetish and aromatic, but soon becomes bitterish, subacid, and nauseous. This root is esteemed sudorific, diuretic, and emmenagogue, and frequently employed by the French and German physicians as an alexipharmac, sometimes as a succedaneum for contrayerva; whence it has received the name of *contrayerva Germanorum*. Among us it is very rarely used. It appears from its sensible qualities to be a medicine of much the same kind with valerian, which is probably preferable to it.

VINUM [Lond. Ed.]

Wine; the fermented juice of the grape. Among the great variety of wines in common use among us, four are employed in the shops as *mentrua* for medicinal simples.

Vinum album Hispanicum, Mount.

Vinum Canarium, Canary or sack.

Vinum Rhenanum, Rhenish.

Vinum Rubrum, Red port.

Wines consist chiefly of water, alcohol, tartar, and an astringent gummy resinous matter, in which the colour of red wines resides, and which is squeezed out from the skins of the grapes. They differ from each other in the proportion of these ingredients, and particularly in that of the alcohol which they contain.

The uses of these liquors as men-

strua and vehicles of the virtues of other medicines, will be given hereafter; in this place we shall consider only their effects on the human body. These are, to stimulate the stomach, cheer the spirits, warm the habit, promote perspiration, render the vessels full and turgid, raise the pulse, and quicken the circulation.

Sweet wines are stronger than they appear from the taste, because two impressions strike more feebly when combined than when separate. Red port, and most of the red wines, have an astringent quality, by which they strengthen the tone of the stomach and intestines, and are thus useful for restraining immoderate secretions. Those which are of an acid nature, as Rhenish, pass freely by the kidneys, and gently loosen the belly. It is supposed that these last exasperate or occasion gouty and calculous disorders; and that new wines of every kind have this effect.

Wine is much used in fevers of the typhous kind, and often with great success, particularly when the appetite seems to call for it, and when the stomach rejects all food. Claret, Madeira, and Port are those commonly employed in Britain.

VIOLEA [Lond. Ed.] *Flos recens.*

Viola odorata Lin.

The march violet; the fresh flower.

This is often found wild in hedges and shady places, and flowers in March; the shops are generally supplied from gardens. In our markets we meet with the flowers of different species; these may be distinguished from the foregoing by their being larger, of

of a pale colour, and of no smell. The officinal flowers have a very pleasant smell, and a deep purplish blue colour, denominated from them *violet*. They impart their colour and flavour to aqueous liquors: a syrup made from this infusion has long maintained a place in the shops, and proves an agreeable and useful laxative for children.

VIPERA [Ed.]

Coluber Berus Lin.

The viper.

The viper is an amphibious reptile, without feet, about an inch thick, and twenty or thirty long. The poison of this serpent is confined to its mouth: at the basis of the fangs, or long teeth with which it wounds, is lodged a little bag containing the poisonous liquid; a very minute portion of which mixed immediately with the blood proves fatal. Our viper-catchers are said to prevent the mischiefs otherwise following from the bite, by rubbing olive oil warm on the part. The flesh of the viper is perfectly innocent; and strongly recommended as a medicine of extraordinary service in scrophulous, leprous, rheumatic, and other oblitinate chronic disorders. Its virtues, however, in these cases, are probably too much exaggerated. The viper is doubtless an highly nutritious food, and hence in some kinds of weaknesses, and emaciated habits, is not undeservedly considered as a good restorative. To answer any valuable purposes, fresh vigorous vipers, not such as have been long kept alive after they are caught, should be liberally used as food. The wines and tinctures of them can scarcely be supposed to receive any considerable virtue from the animal; the dry flesh

brought to us from abroad is probably entirely insignificant.

VIRGA AUREA [Brun.]

Herba.

Solidago Virga aurea Lin.

Golden root; the herb.

This is found wild on heaths and in woods, producing spikes of yellow flowers in August. The leaves have a moderately stringent bitter taste; and hence prove serviceable in debility and laxity of the viscera, and disorders proceeding from that cause.

VISCUS [Succ.] Lignum.

Viscus albus Lin.

Mistletoe; the wood.

This is a bushy plant, growing on the trunk and branches of different trees: that met with on the oak is generally preferred, perhaps on account of its being the most rare. It may, however, be propagated by art by fixing its berries on branches of other trees. This office has hitherto been performed by the thrush (who feeds on the berries in the winter) in clearing his bill from the seeds that stick about it. This plant was held in veneration by the superstition of former ages; it was hung about the neck to prevent witchcraft, and taken internally to expel poisons. It has been celebrated as a specific in epilepsies, palsies, &c.; virtues, to which it were greatly to be wished that experience gave any countenance; but so little reliance is now put upon it, that it is entirely rejected both by the London and Edinburgh colleges.

VITIS [Lond.] *Fru&ut, Uv& pass&, Vinum, Tartarum, Tart& crystalli, Acetum.*

Vitis vinifera Lin.

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The vine tree.

The leaves of this tree were formerly celebrated as astringents, but have for a long time been entirely disregarded: their taste is herbaceous, with only a slight roughness. The trunk of the tree, wounded in the spring, yields a clear, limpid, watery juice: This tear of the vine has been accounted excellent for sore eyes; and by some recommended likewise in ardent and malignant fevers, and as a diuretic. The flowers have a pleasant smell which water elevates from them in distillation; along with the water, a small portion of an elegant essential oil is said to arise, possessing in great perfection the fragrance of the flowers.—The unripe fruit is of a very harsh, rough, sour taste: its expressed juice, called verjuice, was in great esteem among the ancients, and still continues so in some places, as a cooling astringent medicine: a rob and syrup were formerly prepared from it.—The ripe fruit or grapes, of which there are several kinds, properly cured and dried, are the raisins of the shops: the juice by fermentation affords wine, vinegar, and tartar; of all which mention has already been made. See the articles, VINUM, ACETUM, TARTARUM, &c.

VITRIOLUM ALBUM. See ZINCUM.

VITRIOLUM CÆRULEUM. See CUPRUM.

VITRIOLUM VIRIDE. See FERRUM.

ULMARIA [*Brun.*] *Radix.*

Spirea Ulmaria Lin.
Meadow-sweet, or Queen of the Meadows; the root.

This herb is frequent in moist meadows, and about the sides of rivers; it flowers in the beginning of June, and continues in flower a considerable time. The flowers have a very pleasant flavour, which water extracts from them by infusion, and elevates in distillation. The leaves are herbaceous. But neither of these at present enter any pharmacopœias. The roots are used in some plasters, in which they have probably no influence.

ULMUS [*Lond. Ed.*] *Cortex interior.*

Ulmus campestris Lin.

The elm-tree; the inner bark.

This bark has a mild astringent taste. A decoction formed from it, by boiling an ounce with a pound of water, to the consumption of one half, has been highly recommended by some, particularly by Dr Lettsome in obstinate cutaneous eruptions.

URTICA [*Lond. Ed.*] *Herba.*

Urtica dioica Lin.

Common nettle: the herb.

The leaves of the fresh nettle stimulate, inflame, and raise blisters on those parts of the skin which they touch. Hence when a powerful rubefacient is required, singeing with nettles has been recommended. It has been alleged to have sometimes succeeded in restoring sense and motion to paralytic limbs. Both the herb and seed were formerly believed to be lithontriptic and powerfully diuretic; and many other virtues were attributed to them, to which the present practice pays no regard. The young leaves are by some used in the spring as a wholesome pot-herb.

UVA PASSA [*Lond.*] Raisins

Raisins of the sun; the dried grapes of the *vitis Damascena*.

UVÆ PASSÆ *Minoret.*

Currants; the dried grapes of the *vitis Corinthisca*.

The principal use of these is as an agreeable sweet; they impart a very pleasant flavour both to aqueous and spirituous menstrua. The seeds or stones are supposed to give a disagreeable relish, and hence are generally directed to be taken out. The raisins of the sun are an ingredient in the compound decoction of barley, the tincture of fenna, and the compound tincture of cardamoms.

UVA URSI [*Lond. Ed.*] *Fo-* *lium.*

Arbutus uva ursi *Lin.*

Whortleberry; the leaf.

The uva ursi is a low shrub, somewhat resembling the myrtle. It seems first to have been employed in medicine in Spain and the south of France; it is an indigenous vegetable of these countries, but it grows also in northern climates, particularly in Sweden, and on the hills of Scotland. The leaves have a bitterish astrigent taste; and their latter quality is so considerable, that in certain places, particularly in some of the provinces of Russia, they are used for tanning leather. A watery infusion of the leaves immediately strikes a very black colour with chalybeates.

The uva ursi seems first to have been employed in medicine with a view to its astrigent power. With this intention, it was used under the form of decoction, for restraining an immoderate flow of the menses, against other hæmorrhagies, in cases of diarrhoea and dysentery,

and for the cure of cutaneous eruptions. But it had fallen much in to disuse till its employment was again revived by Dr de Haen of Vienna. He bestowed very high encomiums on it, against uterine affections of the kidneys, bladder, and urinary passages. He represents it as capable of curing almost every case of that kind: and even asserts, that in cases of calculus much benefit is derived from its use; patients after the employment of it passing their water easily and without pain. It has, however, by no means answered the expectations, which, on these grounds, other practitioners formed of it: But in many affections of the urinary organs, it has proved to be a remedy of some use; and it has been particularly serviceable in alleviating dyspeptic symptoms in nephritic and calculous cases. It has also been serviceable in cystitis or catarrhus vesicæ; and it has been thought to be sometimes productive of advantage in diabetes. It is sometimes used in the form of decoction, but most frequently in that of powder, from a scruple to a drachm for a dose, repeated twice or thrice a day.

WINTERANUS COR- TEX. [*Brun.*]

Winterania aromatica *Lin.*

Winter's bark.

This is the produce of a tree growing about the southern promontory of America. It was first discovered on the coast of Magellan by Captain Winter, in the year 1567: the sailors then employed the bark as a spice, and afterwards found it serviceable in the scurvy; for which purpose it is at present sometimes used in diet-drinks. The true winter's bark is not often met with in the shops, candela

canella alba being generally substituted for it, and by many it is reckoned to be the same: There is, however, a considerable difference between them in appearance, and a greater in quality. The winter's bark is in larger pieces, of a more cinnamon colour than the *canella*; and tastes much warmer and more pungent.

ZEDOARIA [Lond. Ed.]

Radix.

Kempferia rotunda Lin.

Zedoary; the root.

Zedoary is the root of a plant growing in the East Indies. It is brought over in oblong pieces about the thickness of the finger, or in roundish ones about an inch in diameter. Both sorts have an agreeable fragrant smell, and a warm, bitterish, aromatic taste.

In distillation with water, it yields an essential oil, possessing the smell and flavour of the zedoary in an eminent degree; the remaining decoction is almost a simple bitter. Spirit likewise brings over some small share of its flavour: nevertheless the spirituous extract is considerably more grateful than the zedoary itself.

ZIBETHUM [Brun.]

Viserra Zibetha Lin.

Civet.

This is a soft unctuous substance, of a white, brown, or blackish colour, brought from the Brazils, the coast of Guinea, and the East Indies. It is contained in certain bags, situated in the lower part of the belly of an animal of the cat kind.

The chief use of this drug is in perfumes; it is rarely, if ever,

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employed for any medicinal purposes.

ZINCUM [Lond.] *Lapis calaminaris, Tutia, Vitriolum album, [Eds.] Zincum vitriolatum.*

Zinc.

This is a femimetal, inflammable *per se*; sublimable into flowers; soluble in every acid; not miscible in fusion with sulphur; changing copper into a metal, called brass. Several productions of this metal, though not generally known to be such, are kept in the shops: as its rich ore calamine, the white vitriol, the pure white flowers of zinc called *Pampolys*, and the more impure tutty.

The preparations of zinc are employed principally in external applications as ophthalmics. The flowers levigated into an impalpable powder, form with oily substances an useful ointment, and with rose and other waters, elegant collyria, for defluxions of thin sharp humours on the eyes. They are moderately astringent; and act, if the levigation has been duly performed, without acrimony or irritation.

Internally, they have been recommended in epilepsy and other spasmodic affections, both alone and with the *cuprum ammoniacum*; and some think they prove an useful addition to the Peruvian bark in intermittents.

White vitriol is sometimes given, in doses of from five grains to half a drachm, as an emetic; it operates quickly, and, if pure, without violence. Externally, it is employed as an ophthalmic, and often made the basis of collyria, both in extemporaneous prescription and in dispensaries: such as the *aqua zinci vitriolati cum cam-*

campbora of the London pharmacopœia.

liquors; the latter elevate its whole flavour in distillation, the former little or nothing. Ginger is a very useful spice in cold flatulent colics, and in laxity and debility of the intestines; it does not heat so much as those of the pepper kind, but its effects are more durable. It gives name to an officinal syrup, to the *Zingiber conditum*, or candied ginger brought from abroad; enters the *Electuarium cardiacum*, and some other compositions.

ZINGIBER [Lond. Ed.] Radix.

Anomum zingiber Lin.

Ginger; the root.

This root is brought from China, and the East and West Indies. It has a fragrant smell, and a hot, biting aromatic taste. Rectified spirit extracts its virtues by infusion, in much greater perfection than aqueous

GENERAL RULES for the collection and Preservation of SIMPLES.

Roots.

ANNUAL roots are to be taken up before they shoot out stalks or flowers: Biennial ones chiefly in the autumn of the same year in which the seeds were sown:

The perennial, when the leaves fall off, and therefore generally in the autumn. Being washed clean from dirt, and freed from the rotten and decayed fibres, they are to be hung up in a warm, airy place, till sufficiently dried; and when thoroughly dry they ought to be kept in tin canisters with close covers, and in a dry room. The thicker roots require to be slit longitudinally, or cut transversely into thin slices and hung with packthread in festoons, so that the slices do not touch

each other. Such roots as lose their virtues by exsiccation, or are desired to be preserved in a fresh state, for the greater convenience of their use in certain forms, are to be kept buried in dry sand, in a cool cellar.

THERE are two seasons in which the biennial and perennial roots are reckoned the most vigorous, the autumn and spring; or rather the time when the stalks or leaves have fallen off, and that in which the vegetation is just to begin again, or soon after it has begun; which times are found to differ considerably in different plants.

The college of Edinburgh, in the two first editions of their pharmacopœias, directed them to be dug

dug in the spring, after the leaves are formed; in the third edition, the autumn was preferred. The generality of roots appear, indeed, to be most efficacious in the spring: but as at this time they are also the most juicy, and consequently shrivel much in drying, and are rather more difficultly preserved, it is commonly thought most advisable to take them up in autumn. No rule, however, can be given, that shall obtain universally: arum root is taken even in the middle of summer, without suspicion of its being less active than at other seasons; while angelica root is inserted during the summer, in comparison of what it is in the autumn, spring, or winter.

HERBS and LEAVES.

HERBS are to be gathered when the leaves have come to their full growth, before the flowers unfold: but of some plants the flowery tops are preferred. They are to be dried in the same manner as roots.

For the gathering of leaves, there cannot perhaps be any universal rule, any more than for roots: for though most herbs appear to be in their greatest vigour about the time of their flowering, or a little before, there are some in which the medicinal parts are more abundant at an earlier period.

Thus mallow and marshmallow leaves are most mucilaginous when young, and by the time of flowering approach more to a woody nature. A difference of the same kind is more remarkable in the leaves of certain trees and shrubs: the young buds, or rudiments of the leaves, of the black poplar

tree, have a strong fragrant smell, approaching to that of storax; but by the time that the leaves have come to their full growth their fragrance is exhausted.

Herbs are directed by most of the pharmacæutic writers to be dried in the shade; a rule which appears to be very just, though it has sometimes been misunderstood. They are not to be excluded from the sun's heat, but from its *light*; by which their colours are liable to be altered or destroyed. Slow drying of them in a cool place is far from being of any advantage: both their colours and virtues are preserved in greatest perfection, when they are dried hastily by the heat of the sun, or of a common fire as great as that which they can bear without being scorched, especially the more succulent, which are otherwise liable to turn black. Odoriferous herbs, dried by fire till they become friable, discover indeed, in this acrid state, very little smell; not that the odorous matter is dissipated; but on account of its not being communicated from the perfectly dry subject to dry air; for as soon as a watery vehicle is supplied, whether by infusing the plant in water, or by exposing it for a little time to a moist air, the odorous parts begin to be extracted by virtue of the aqueous moisture, and discover themselves in their full force.

Of the use of heat in drying herbs, we have an instance in the treatment of tea among the Chinese. According to the accounts of travellers, the leaves, as soon as gathered, are brought into an apartment furnished with a number of little furnaces, or stoves, each of which is covered with a clean

support

smooth iron plate; the leaves are spread on the plates, and kept rolling with the hands till they begin to curl up about the edges; they are then immediately swept off on tables, on which one person continues to roll them, while another fans them that they may cool hastily: this process is repeated two or three times, or oftener, according as the leaves are disposed to unbend on standing.

EXSICCATION OF HERBS AND FLOWERS.

HERBS and flowers are to be dried by the gentle heat of a stove or common fire, and only in that quantity at a time by which the exsiccation may be very soon finished. By this means their strength and native colour are best preserved.

The leaves of hemlock, and some other herbs replete with a subtle volatile matter, are to be powdered immediately after the exsiccation, and preserved in glass-vessels, well shut.

FLOWERS.

FLOWERS are to be gathered when moderately expanded, on a clear dry day, before noon. Red roses are taken before they open, and the white heels clipped off and thrown away.

THE quick drying, above recommended for the leaves of plants, is more particularly proper for flowers; in most of which both the colour and smell are more perishable than in leaves, and more subject to be impaired by slow exsiccation. Of the flowers which come fresh into the apothecaries

hands, the only ones employed dry in the London Pharmacopœia are red roses; and these, in all the compositions in which they are used in a dry state, are expressly ordered to be dried hastily.

It may here be observed, that the virtues of flowers are confined to different parts of the flower in different plants. Saffron is a singular production being the end of the style or pistil. The active part of chamomile flowers is the yellow disk, or button in the middle; that of lilies, roses, clove-july-flowers, violets, and many others, the petala or flower-leaves; while rosemary has little in any of these parts, its fragrance residing chiefly in the flower cup.

FRUITS AND SEEDS.

FRUITS are to be gathered when ripe, unless otherwise ordered. Seeds should be collected when ripe and beginning to grow dry, before they fall off spontaneously.

OF the fruits whose collection comes under the notice of the apothecary, there are few which are used in an unripe state: the principal is the sloe, whose virtue as a mild astringent is much diminished by maturation.

The rule for collecting seeds is more general than any of the others, all the officinal seeds being in their greatest perfection at the time of their maturity. As seeds contain little watery moisture, they require no other warmth for drying them than that of the temperate air of autumn; such as abound with a gross expresible oil, should never be exposed to any considerable heat; for this would hasten

hasten their rancidity. Seeds are best preserved in their natural husks or coverings, which should be separated only at the time of using; the husk, or cortical part, serving to defend the seed from being injured by the air.

WOODS and BARKS.

The most proper season for the felling of woods, or shaving off their barks, is generally the winter.

No woods of our own growth are now retained by the London or Edinburgh colleges.

It may be doubted, whether barks are not generally more complete with medicinal matter in summer and spring than in winter. The barks of many trees are in summer so much loaded with resin and gum, as to burst spontane-

ously, and discharge this redundant quantity. It is said that the bark of the oak answers best for the tanners at the time of the rising of the sap in spring: and as its use in tanning depends on the same astrigent quality for which it is used in medicine, it should seem to be also fittest for medicinal purposes in the spring. It may be observed likewise, that, in this last season, barks in general are most conveniently peeled off.

ANIMAL SUBSTANCES.

ANIMAL substances are to be chosen in their most perfect state, unless they be ordered otherwise.

Whatever virtues these bodies may have, they are supposed to be best when they have attained to their common full growth.

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Preparations and Compositions.

C H A P. I.

PREPARATIONES SIMPLICIORES.

THE MORE SIMPLE PREPARATIONS.

QUORANDUM AQUA NON
SOLUBILIUM PRÆPARATIO.
RATIO.

Lond.

*The preparation of some Substances
not soluble in water.*

REDUCE these substances first in a mortar to a fine powder; and pouring on a little water, levigate it on a hard and polished, but not calcareous, stone, that it may be made as fine as possible. Dry this fine powder on blotting paper laid on chalk, and set it in a warm, or at least a dry, place, for some days.

In this manner are to be prepared,

Amber,
Antimony,
Calamine,
Chalk,
Coral.

Crabs claws, first broken into small pieces, must be washed with boiling water before they be levigated.

Oyster-shells, first cleaned from adhering impurities.
Tutty.

Verdigris.

WHERE large quantities of the foregoing powders are to be prepared, it is customary, instead of the stone and mullet, to employ hand-mills made for this purpose, consisting of two stones; the uppermost of which turns horizontally on the lower, and has an aperture in the middle for supplying fresh matter, or for returning that which has already passed, till it be reduced to a proper degree of fineness.

For the levigation of hard bodies, particular care should be taken, whatever kind of instruments be used, that they be of sufficient hardness, otherwise they will be abraded by the powders. The hæmatites, a hard iron ore, is most conveniently levigated between two iron planes; for if the common levigating stones be used, the preparation, when finished, will contain

contain almost as much foreign matter from the instrument as the hæmatites.

It has been customary to moisten several powders in levigation, with rose, balm, and other distilled waters: these, nevertheless, have no advantage above common water, since in the subsequent exsiccation they must necessarily exhale, leaving the medicine possessed of no other virtue than what might be equally expected from it when prepared with pure water.

Some few substances, indeed, are more advantageously levigated with spirit of wine than with water. A little spirit may be added to animal substances, if the weather be very hot, and large quantities of them are prepared at once, to prevent their running into putrefaction; an accident which, in those circumstances, sometimes happens when they are levigated with water only. Crabs-eyes, which abound with animal gelatinous matter, are particularly liable to this inconvenience.

The caution given above for reducing antimony, calamine, and turty, to the greatest subtilty possible, demands particular attention. The tenderness of the parts to which the two last are usually applied, requires them to be perfectly free from any admixture of gross irritating particles. The first, when not thoroughly comminuted, might not only, by its sharp needle-like spicula, wound the stomach, but likewise answers little valuable purpose as a medicine, proving either an useless load upon the viscera, or at best passing off without any other sensible effect than an increase of the grosser evacuations; while, if reduced to a great degree of fineness, it turns

out a medicine of considerable efficacy.

The most successful method of obtaining these powders of the requisite tenuity, is, to wash off the finer parts by means of water, and continue levigating the remainder till the whole become fine enough to remain for some time suspended in the fluid; this process is received in the Edinburgh pharmacopœia, and there directed in the preparation of the following article.

ANTIMONIUM PRÆPARATUM.

Edinburgh.

Prepared Antimony.

Let the antimony be first pounded in an iron mortar, and then levigated on a porphyry with a little water. After, this, put it into a large vessel, and pour a quantity of water on it. Let the vessel be repeatedly shaken, that the finer part of the powder may be diffused through the water; the muddy liquor is then to be poured off, and set by till the fine powder settles.

The gross part, which the water would not suspend, is to be further levigated, and treated in the same manner.

By this method, powders may be obtained of any required degree of tenuity; and without the least mixture of the gross parts, which are always found to remain in them after long continued levigation; all the coarser matter settles at first, and the finer powder continues suspended in the water, longer and longer, in proportion to the degree of its fineness. The same process may likewise be advantageously

gously applied to other hard pulverisable bodies of the mineral kingdom, or artificial preparations of them; provided they be not soluble in, or specifically lighter than water. The animal and absorbent powders, crabs-claws, crabs-eyes, oyster-shells, egg-shells, chalk, coral, &c. are not well adapted to this treatment; nor indeed do they require it. These substances are readily soluble in acid juices without much comminution: if no acid be contained in the first passages, they are apt to concret, with the mucous matter usually lodged there, into hard indissoluble masses; the greater degree of fineness they are reduced to, the more they are disposed to form such concretions, and become liable to obstruct the orifices of the small vessels.

CALAMINARIS LAPIS PRÆPARATUS.

Edin.
Prepared Calamine.

Calamine, previously calcined by brass founders, is to be treated in the same manner as antimony.

As calamine is intended for external application, and often to parts very easily irritated, too much pains cannot be bestowed in reducing it to a fine powder.

CRETA PRÆPARATA.

Edin.
Prepared Chalk.

Chalk first triturated and then frequently washed with water, till it imparts to the water neither taste nor colour, is to be treated in the same manner as antimony.

M m

CANCORUM LAPILLI PRÆPARATI, VULGO OCULI CANCRORUM.

Edin.
Prepared Crabs Stones.

TUTIA PRÆPARATA.

Edin.
Prepared Tutty.

These are to be prepared like antimony.

TESTÆ OSTREARUM PRÆPARATÆ.

Edin.
Prepared Oyster Shells.

After being well cleaned from adhering impurities, they are to be prepared like antimony.

ADIPIS SUILLÆ, SEVIQUE OVILLI PRÆPARATIO.

Lond.
The preparation of hog's lard and mutton suet.

AUXUNGIA PORCINA PRÆPARATA.

Edin.
Prepared hog's lard.

Cut them into pieces, and melt them over a slow fire; then separate them from the membranes by straining.

The apothecary will in general find it more for his interest to purchase hogs lard and mutton suet ready prepared than to prepare them for himself: for the process requires to be very cautiously conducted, to prevent the fat from burning or turning black.

AMMO;

AMMONIACI GUMMI PURIFICATIO.

The purification of gum ammoniacum.
Lond.

If gum ammoniac do not seem to be pure, boil it in water till it become soft; then squeeze it through a canvas bag, by means of a press. Let it remain at rest till the resinous part subsides; then evaporate the water; and toward the end of the evaporation restore the resinous part, mixing it with the gummy.

In the same manner are purified assafrida and such like gummy resins.

You may also purify any gum which melts easily, such as Galbanum, by putting it in an ox-bladder, and holding it in boiling water till it be so soft that it can be separated from its impurities by pressing through a coarse linen cloth.

In straining all the gums care should be taken that the heat be neither great, nor long continued; otherwise a considerable portion of their more active volatile matter will be lost; an inconvenience, which cannot, by any care, be wholly avoided. Hence the purer tears, unstrained, are in general to be preferred, for internal use, to the strained gums.

An additional reason for this preference is, that some of the gum-resins, purified in the common way, by solution in water, expreffion, and evaporation, are not so easily soluble in aqueous menstrua after, as before, such depuration. On these accounts

this process is entirely omitted by the Edinburgh college; and in every case where a gummy resinous substance, before it be taken, is to be dissolved in water, it may be as effectually freed from impurities at the time of solution as by this process. And when it is to be employed in a solid state, care should be taken that the purer parts alone be selected.

CORNU CERVI USTIO.

The burning of hartshorn.
Lond.

Burn pieces of hartshorn till they become perfectly white; then reduce them to a very fine powder.

THE pieces of horn generally employed in this operation are those left after distillation.

In the burning of hartshorn, a strong fire and the free admission of air are necessary. The potter's furnace was formerly directed for the sake of convenience; but any common furnace or stove will do. If the pieces of horn be laid on some lighted charcoal spread on the bottom of the grate, they will be burnt to whiteness, still retaining their original form.

Burnt hartshorn is not now considered as a pure earth, having been found to be a compound of calcareous earth and phosphoric acid. It is the weakest of the animal absorbents, and is difficultly soluble in acids; but whether it be of equal or superior use in diarrhoeas to more powerful absorbents, must be left to observation.

HER.

HERBARIUM et FLORUM
EXSICCATIO.

Lond.

The drying of herbs and flowers.

Let these, spread out lightly, be dried by a gentle heat.

MEL DESPUMATUM.

Edin.

Purified honey.

Melt the honey by the heat of a water bath, and remove the scum.

Edin.

Herbs and flowers must be dried by the gentle heat of a stove or common fire, in such quantities at a time, that the process may be speedily finished; for by this means their medical powers are best preserved. The test of which is the perfect preservation of their natural colour. The leaves of cicuta, and of other plants containing a volatile matter, must be immediately pounded, after being dried, and afterwards kept in a phial with a ground stopper.

THE intention of this process is to purify the honey from wax, or other droffy matters that adhere to it, or are sometimes fraudulently mixed with it. When the honey is rendered liquid and thin by the heat, these lighter matters rise freely to the surface.

MILLEPEDÆ PRÆPARATIO.

Lond.

The preparation of millepedæ.

MILLEPEDÆ PRÆPARATIO.

Tæ.

Edin.
Prepared millepedæ

THE directions given by the London college are here less explicit, and less proper than those of the Edinburgh college: for there can be no doubt of the propriety of drying these substances hastily, by the aid of artificial heat, rather than by the heat of the sun. In the application of artificial heat, the only caution requisite is to avoid burning; and of this a sufficient test is afforded by the preservation of colour. And the direction given with regard to cicuta may be followed in most cases where flowers and herbs are kept and exhibited in powder.

THE millepedes are to be inclosed in a thin canvas cloth, and suspended over hot proof spirit in a close vessel, till they be killed by the steam, and rendered friable.

THIS is a convenient way of rendering millepedes pulverisable, without endangering any loss of such virtues as they may possess.

The directions given by both colleges are precisely the same, and delivered in almost the same words.

PULPARUM EXTRACTIO.

Edin.

The extraction of pulps.

MELLIS DESPUMATIO.

Lond.

The purifying of honey.

Boil unripe pulpy fruits, and ripe ones if they be dry, in a small

quant.

quantity of water until they become soft : then press out the pulp through a hair sieve, and afterwards boil it down to the consistence of honey in an earthen vessel, over a gentle fire ; taking care to keep stirring the matter continually.

The pulp of cassia fistularis is in like manner to be boiled out from the bruised pod, and reduced afterwards to a proper consistence, by evaporating the water.

The pulps of fruits that are both ripe and fresh, are to be pressed out through the sieve, without any previous boiling.

In the extraction of pulps, the direction of both colleges so nearly agree, that it is unnecessary to give a separate translation of each. We may only observe, that the London college, instead of softening the fruits by boiling them in a small quantity of water, direct them to be put in a moist place. This direction, though proper in some cases, is not generally the most suitable.

SCILLÆ EXSICCATIO.

Lond.

The drying of squills.

SCILLA EXSICCATA.

Edin

Dried squill.

Let the squill, cleared from its outer skin, be cut transversely into thin slices, and dried with a gentle heat. When properly managed, the squill is friable, and retains its bitterness and acrimony.

By this method the squill dries much sooner than when its several coats are only separated, as has been usually directed ; the internal part is here laid bare, but, in each of the entire coats, it is covered with a thin skin, which impedes the exhalation of the moisture. The root loses in this process four fifths of its original weight ; the parts which exhale appear to be merely watery : fix grains of the dry root being equivalent to half a drachm of the fresh : a circumstance to be particularly regarded in the exhibition of this medicine. In the preceding editions of our pharmacopœias, a particular caution was given, not to use an iron knife for cutting squills, but one of wood, ivory, or bone : the reason of this caution is said to be, not so much that the squill would receive any ill qualities from the iron ; as that its acrid juice, adhering to the knife, might render a wound received by it extremely painful, or even dangerous : but as no danger is to be apprehended from such an accident, the direction appears unnecessary. Dried squills furnish us with a medicine, sometimes advantageously employed as an emetic, often as an expectorant, but still more frequently as a powerful diuretic.

SPONGIÆ USTIO.

Lond.

The burning of sponge.

Cut the sponge in pieces, and bruise it, and when separated from its gritty matter, burn it in a close iron vessel, until it becomes black and friable ; afterwards rub it to a very fine powder.

SPONGIA

SPONGIA USTA.

Edin.

Burnt sponge.

Put the sponge, cut into a small pieces, and well freed from adhering earthy matters, into a close earthen vessel. Place it on the fire, and let it be stirred frequently till it become black and friable; then reduce it to a powder in a glass or marble mortar.

THIS medicine has been in use for a considerable time, and employed against scrophulous disorders and cutaneous foulnesses, in doses of a scruple and upwards. Its virtues seem to depend on a volatile salt just formed, and combined with its own oil. If the sponge be distilled with a strong heat, it yields a large proportion of that salt in its proper form. The salt is in this preparation so far extricated, that if the burnt sponge be ground in a brass mortar, it corrodes the metal, so as to contract a disagreeable taint, and sometimes an emetic quality.

Bees, earthworms, and other animal substances, have by some been prepared in the same manner, and recommended in different diseases: but as these substances fall much short of sponge in the quantity of volatile salt producible from them by fire, they are probably inferior also in medicinal efficacy. Of all the animal matters that have been tried, raw silk is the only one which exceeds, or equals sponge, in the produce of salt.

A good deal of address is requisite for managing this process in perfection. The sponge should be cut small, and beaten for some time in a mortar, that all the stony

matters may be got out, which compared with the weight of the sponge when prepared, will sometimes amount to a considerable quantity. The burning should be discontinued as soon as the matter is become thoroughly black. If the quantity put into the vessel at once be large, the outside will be sufficiently burnt before the inside be affected: and the volatile salt of the former will in part escape, before that of the latter is begun to be formed. The best method of avoiding this inconvenience seems to be, to keep the sponge continually stirring, in such a machine as is used for the roasting of coffee.

From this circumstance the iron vessel directed by the London college is preferable to the earthen one directed by that of Edinburgh. But the pounding in a glass or marble mortar, is a necessary caution which the London college have omitted.

STYRACIS PURIFICATIO.

Lond.

The purification of storax.

Dissolve the storax in rectified spirit of wine, and strain the solution: afterwards reduce it to a proper thickness with a gentle heat.

STORAX was formerly directed to be purified by means of water; hence it was styled *styracis collatio*: but the method now adopted is much preferable, for the active parts of the storax totally dissolve in spirit of wine, the impurities alone being left. And as these active parts do not rise in distillation, the spirit may be again recovered by distillation.

MU-

MUCILAGINUM EXTRAC-
TIO.*Gen.**The extraction of mucilages.*

Boil the gums or mucilaginous seeds in a sufficient quantity of water, till it becomes viscid, nearly resembling the white of an egg; and then strain it by pressure through a linen cloth.

Although this process be not given in either of our pharmacopœias, yet it might have been adopted with advantage: It is certainly a very good method for obtaining a pure mucilage from such vegetables as contain any.

C H A P. II.

C O N S E R V Æ.

C O N S E R V E S.

CONSERVES are compositions of sugar and recent vegetable matters beaten together into an uniform mass.

This management is introduced for preserving certain simples undried in an agreeable form, with as little alteration as possible of their native virtues: and to some subjects it is very advantageously applied. Vegetables, whose virtues are lost or destroyed by drying, may in this form be long kept uninjured: for by carefully securing the mouth of the containing vessel, the alteration, as well as dissipation, of their active principles, is generally prevented; and the sugar preserves them from the corruption which juicy vegetables would otherwise undergo.

There are, however, several vegetables whose virtues are impaired by this treatment. Mucilaginous substances, by long lying with sugar, become less glutinous; and astringents become sensibly softer on the palate. Many of the fragrant flowers are of so tender and delicate a texture, as almost entirely to lose their peculiar qualities on being beaten or bruised.

In general, it is obvious, that in this form, on account of the large admixture of sugar, only substances of considerable activity can be taken

to advantage as medicines; and, indeed, conserves are at present considered chiefly as auxiliaries to medicines of greater efficacy, or as intermedia for joining them together. They are very convenient for reducing into boluses or pills the more ponderous powders, as calomel, the calces of iron and other mineral preparations; which, will not cohere with liquid, or less consistent matters, as syrups.

The shops were formerly encumbered with many conserves altogether insignificant; the few now retained have in general either an agreeable flavour to recommend them, or are capable of answering some useful purposes as medicines. Their common dose is the bulk of a nutmeg, or as much as can be taken up at once or twice upon the point of a knife. There is in general no great danger of exceeding in this particular.

CONSERVÆ.

ABSINTHII MARITIMI,

Of sea worm wood;

CORTICIS EXTERIO-

RIS AURANTII HIS-

PALENSIS;

Of the outer rind of the Seville orange.

LUTJ-

LUJULÆ.

Of wood sorrel.

ROSÆ RUBRÆ.

*Of the red rose;**Lond.*

Pluck the leaves from the stalks and the unblown petals from the cups, taking off the heels. Rasp off the outer rind of the oranges by a grater; then beat each of them with a wooden pestle in a marble mortar, first by themselves, and afterwards with three times their weight of double refined sugar, until they be mixed.

CONSERVÆ.

MENTHÆ SATIVÆ FO-

LIORUM RECENTIUM,

Of the fresh leaves of mint;

ROSÆ RUBRÆ PETA-

LORUM NONDUM EX-

PLICATORUM;

Of red rose buds.

AURANTIORUM HIS-

PALENSIUM CORTI-

CIS EXTERIORIS

RECENTIS RADULA

ABRASI.

Of the outer rind of Seville oranges rasped off by a grater.

CYNOSBATI FRUCTUS

MATURI PULPÆ a se-

minibus eorumque pube sollicitè purgatæ.

Of the pulp of ripe hips freed

from the seeds and down adhering to them.

Edin.

Beat each of these to a pulp, gradually adding during the beating three times their weight of double refined sugar.

The sugar should be pounded by itself, and passed through a sieve,

before it be mixed with the vegetable mass, for without this it cannot be properly incorporated. Rose buds, and some other vegetables, are prepared for mixing with sugar by a small wooden mill contrived for that purpose.

In the same manner conserves may be prepared from many other vegetables. But besides the conserves for which general directions are given, there are others, for which our pharmacopœias have thought it necessary to give particular directions. But before taking notice of those, it is necessary to mention the medical properties of the conserves above enumerated.

CONSERVA LUJULÆ.

*Lond.**Conserve of wood-sorrel.*

THIS is a very elegant and grateful conserve; in taste it is lightly acidulous, with a peculiar flavour, like that of green tea. It is taken occasionally for quenching thirst, and cooling the mouth and fauces, in distempers where the heat of the body is much increased.

CONSERVA ABSINTHII MARITIMI.

*Lond.**Conserve of sea wormwood.*

THE conserve of wormwood has been celebrated in dropies: Martholus relates, that several persons were cured by it of that distemper without the assistance of any other medicine. Where the disorder indeed proceeds from a simple laxity or flaccidity of the solids, the continued use of this medicine may be of some service; as it appears to be an elegant mild corroborant.

It is directed to be given in the dose of half an ounce about three hours before meals.

CONSERVA ROSÆ RUBRÆ.

Lond. Edinb.

Conserve of red roses.

THIS is a very agreeable and useful conserve. A drachm or two dissolved in warm milk, is frequently given as a slight refrigerant, in weakness of the stomach, and likewise in coughs and phthysical complaints. In the German ephemerides, examples are related of very dangerous phthisis cured by the continued use of this medicine: In one of these cases, twenty pounds of the conserve were taken in the space of a month; and in another, upwards of thirty. Riverius mentions several other instances of this kind. There is, however, much room for fallacy in such observations; as phthisis has not at all times been accurately distinguished from obstinate catarrhs, and some other affections: the antiseptic property of the sugar may perhaps have some share in the effect.

CONSERVA AURANTIORUM.

Lond. Edinb.

Conserve of Seville orange.

THIS conserve is a very elegant one, containing all the virtues of the peel in a form sufficiently agreeable, both with regard to the dose and the convenience of taking. It is a pleasant warm stomachic; and with this intention is frequently used.

CONSERVA MENTHÆ.

Edinb.

Conserve of mint.

THE conserve of mint retains the taste and virtues of the herb. It is given in weaknesses of the stomach and retchings to vomit: and frequently does service in some cases of this kind, where the warmer and more active preparations of mint would be less proper.

CONSERVA ARUM.

Lond.

Conserve of arum.

Take

The fresh root of arum bruised, half a pound;

Double refined sugar, a pound and a half;

Beat them together in a mortar.

THE root of arum, in its recent state, is a substance of great activity; but this activity is almost entirely lost on drying. Hence the compound powder which had formerly a place in our pharmacopœias is now rejected. And as neither water nor spirit extract its activity, this conserve is the best form in which it can be preserved in our shops. It may be given to adults in doses of a drachm.

CONSERVA CYNOSBATI.

Lond.

Conserve of hips.

Take of

Pulp of ripe hips, one pound;

Double refined sugar powdered, twenty ounces.

Mix them into a conserve.

THE conserve of hips is of some esteem

esteem as a soft cooling refrigerant; three or four drachms or more are given at a time, in bilious fluxes, sharpness of urine, and hot indispositions of the stomach:

A good deal of care is requisite on the part of the apothecary in making this conserve; the pulp is apt to carry with it some of the prickly fibres, with which the inside of the fruit is lined: if these be retained in the conserve, they will irritate the stomach so as to occasion vomiting.

CONSERVA PRUNI SYL- VESTRIS.

Lond. Edinb.

Conserve of sloes.

Put the sloes in water upon the fire that they may soften, taking care that they be not broken; then, the sloes being taken out of the water, press out the pulp, and mix it with three times its weight of double-refined sugar into a conserve.

THIS preparation is a gentle astringent, and may be given as such in the dose of two or three drachms. The degree of its astringency will vary according to the maturity of the sloes, and length of time for which the conserve has been kept.

CONSERVA SCILLÆ.

Lond.

Conserve of squills.

Take of

Fresh squills, one ounce;

Double-refined sugar, five ounces.

Beat them together in a mortar into a conserve.

THIS conserve is directed to be prepared in a small quantity, to

guard against its varying in strength. It may be given, to adults, in doses of from half a drachm to two scruples, especially when fresh.

The conserve of squills is a more uncertain and less agreeable mode of exhibiting this article, than the powder of the dried root made into pills, or a bolus with any other conserve.

CONSERVA FOLIORUM CEREFOLII.

Succ.

Conserve of chevvil.

Take of

Fresh leaves of chevvil,

Double-refined sugar, each equal parts.

Beat them together into a conserve.

CHEVVIL has by some been extolled as an useful diuretic; and this is perhaps one of the most pleasant forms under which it can be exhibited.

CONSERVA MILLEPEDA- RUM.

Brun.

Conserve of Millepeds.

Take of

Live millepeds, one pound;

Double-refined sugar, two pounds and an half.

Beat them together into a conserve.

IF the millepeds possess those virtues which some have alleged, this is one of the best forms in which they can be exhibited; and as they are frequently prescribed for children, it may be easily taken, when other forms cannot be introduced.

CON-

CONSERVA ROSARUM VI-
TRIOLATA.*Brun.**Vitriolated conserve of roses.*

useful means of somewhat increasing the astringency of the conserve of roses: But for these purposes for which the vitriolic acid is in general employed, the quantity that can thus be introduced is too inconsiderable to be of much service.

To each pound of the conserve of roses add two drachms of the diluted vitriolic acid.

THIS may be in some cases an

C H A P. III.

S U C C I.

J U I C E S.

JUICES are obtained from the succulent parts of plants, by including them, after being properly cut, bruised, &c. in a hair bag, and pressing them, between wooden cheeks, in the common screw-press, as long as any liquor exudes.

The harder fruits require to be previously well beaten or ground : but herbs are to be only moderately bruised, for otherwise a large quantity of the herbaceous matter will be forced out along with the juice. Hempen or woollen bags are apt to communicate a disagreeable flavour ; their threads likewise swell by moisture, so as to prevent in a great measure the free percolation of the juice.

The fluids thus extracted from succulent fruits, both of the acid and sweet kind ; from most of the acid herbs, as scurvy-grass and water-cresses ; from the acid herbs, as sorrel and wood sorrel ; from aperient lactescent plants, as dandelion and hawkweed ; and from sun-dry other vegetables, contain great part of the peculiar taste and virtues of the respective subjects. The juices, on the other hand, extracted from most of the aromatic herbs, as those of mint and the fragrant Turkey balm, commonly called *balm of Gilead*, have scarcely

any thing of the flavour of the plants, and seem to differ little from decoctions of them made in water boiled till the volatile odorous parts have been dissipated. Many of the odoriferous flowers, as the lily, violet, hyacinth, not only impart nothing of their fragrance to their juice, but have it totally destroyed by the previous bruising. From want of sufficient attention to these particulars, practitioners have been frequently deceived in the effects of preparations of this class : juice of mint has been often prescribed as a stomachic, though it wants those qualities by which mint itself and its other preparations operate.

The juices, thus forcibly pressed out from plants, differ from those which flow spontaneously, or from incisions : these last consisting chiefly of such fluids as are not diffused through the whole substance of the vegetable subject, but elaborated in distinct vessels, or secreted into particular receptacles. From poppy heads, slightly wounded, there issues a thick milky liquor, which dries by a moderate warmth into opium ; whilst the juice obtained from them by pressure is of a dark green colour, and far weaker in virtue.

Juices newly expressed are generally

ally thick, viscid, and very impure: by colature, a quantity of gross matter is separated, the juice becomes thinner, limpid, and better fitted for medicinal purposes, though as yet not entirely pure; on standing, it becomes again turbid and is apt to run into a fermentative or putrefactive state. Clarification with whites of eggs renders the juices more perfectly fine; but there are few that will bear this treatment without a manifest injury to their flavour, taste, and virtue.

The most effectual method of purifying and preserving these liquors, is to let the strained juices stand in a cool place till they have deposited their grosser feces, and then gently pass them several times through a fine strainer till perfectly clear; when about a fortieth part of their weight of good spirit of wine may be added, and the whole suffered to stand as before: a fresh sediment will now be deposited, from which the liquor is to be poured off, strained again, and put into small bottles which have been washed with spirit and dried. A little oil is to be poured on the surface, so as very nearly to fill the bottles, and the mouths closed with leather, paper, or stopped with cotton, as the flasks are in which Florence oil is brought to us: this serves to keep out dust, and suffers the air, which in process of times arises from all vegetable liquors, to escape; which air would otherwise endanger the bursting of the bottles; or being imbibed afresh, render their contents rapid and foul. The bottles are to be kept on the bottom of a good cellar or vault, placed up to the necks in sand. By this method some juices may be preserved for

a year or two, and others for a much longer time.

It has already been observed, that there are great differences in juices, in regard to their being accompanied in the expression with the virtues of the subjects. There are equal differences in regard to their preserving those virtues, and this independently of the volatility of the active matter, or its disposition to exhale. Even the volatile virtue of scurvy grass may, by the above method, be preserved almost entire in its juice for a considerable time; while the active parts of the juice of the wild cucumber quickly separate, and settle to the bottom, leaving the fluid part inert. Juices of arum root, iris root, bryony root, and sundry other vegetables, throw down in like manner their medicinal parts to the bottom

SUCCUS COCHLEARIE COMPOSITUS.

Lond. Edin.

Compound juice of scurvy-grass.

Take of

Juice of Brook lime,
Water cresses, of each
one pint;
Seville oranges, twenty
ouunces by measure;
Garden scurvy-grass,
two pints;

Mix them, and, after the feces have subsided, pour off the liquor, or strain it.

Edinb.

Take of

Juice of Scurvy grass,
Water cresses, pressed
from fresh gathered
herbs,

Juice

Juice of Seville oranges, of each two pounds;

Spirit of nutmegs, half a pound. Mix them, and let them stand till the feces have subsided, then pour off the clear liquor.

IN this formula the Edinburgh college have rejected the brooklime and the sugar of their former editions. The sugar was certainly a very improper addition; for though it may preserve dry vegetable matters, yet when added to juices largely impregnated with watery and mucilaginous matter, it would no doubt furnish that very principle most favourable to the production of the vinous fermentation. For the compound horradish water they have substituted the spirit of nutmegs: Besides that this water has the same property of preserving the juices from fermentation; it is also much more agreeable to the palate, and will make the juices fit easier on the stomach.

The London college have retained nearly their former formula, giving it only a more proper name.

Both these compositions are of considerable use in scorbutic cases. The orange juice, is an excellent assitant to the scurvy-grass, and other acrid antiscorbutics; which, when thus mixed, have been found from experience to produce much better effects than when employed by themselves. These juices may be taken in doses of from an ounce or two to a quarter of a pint, twice or thrice a day: they generally increase the urinary secretion, and sometimes induce a laxative habit. Preserved with the cautions above-mentioned, they will keep good for a considerable time; though whatever care

be taken, they are found to answer better when fresh: and from the difficulty of preserving them, they have of late been very much laid aside, especially since we have been provided with more convenient and useful remedies.

INSPISSATED JUICES.

When vegetable juices, or watery or spirituous decoctions or infusions, are exposed to a continued heat, the fluid gradually evaporating, carries off with it such volatile matters as it was impregnated with, and leaves the more fixed united together into one mass. The mass which remains from the evaporation of the expressed juice of a plant is called *inspissated juice*; from watery decoctions or infusions, an *extract*; from spirituous tinctures, a *resin* or *essential extract*. The term *extract* is frequently used also as a general appellation of all the three kinds. Inspissated juices and watery decoctions, particularly the former, when evaporated no further than to the consistence of oil or honey, are called *rob*; and spirituous tinctures, reduced to a like consistence, are called *balams*.

What relates to the expression of juices, has already been delivered, with the most effectual means of preserving them in their liquid state, and a general account of what substances do or do not give out their virtues with their juices. In the inspissation of juices there is farther to be considered the volatility or fixity of their medicinal parts: if a plant loses its virtue, or part of its virtue, on being dried, it is obvious that the juice must lose as much on being inspissated to dryness, how gentle soever the heat be with which the inspissation is per-

performed. It is likewise to be observed, that the medicinal parts of some juices are kept in a state of perfect solution by the watery fluid, so as to be completely retained by it after the liquor has been made fine by settling, straining, or other means; while the medicinal parts of others, not dissoluble by watery menstrua, are only diffused through the liquor in the same manner as the feculencies are, and separate along with these on standing.

SUCCUS BACCÆ SAMBUCI SPISSATUS.

Lond.

Insipissated juice of the elder berry.

Take of

Expressed and depurated juice of elder-berries, two pints.

Insipissate it in a water bath saturated with sea-salt.

SUCCUS SPISSATUS BAC- CARUM SAMBUCI, vulgo ROB SAMBUCI.

Edinb.

*Insipissated juice of elder-berries, com-
monly called Elder Rob.*

Take of

Juice of ripe elder-berries, five pounds;

Purest sugar, one pound.

Evaporate with a gentle heat to the consistence of pretty thick honey.

THIS preparation, made with or without sugar, keeps well, and proves a medicine of considerable importance as an aperient, generally promoting the natural excretions by stool, urine, or sweat. The dose is from a drachm or two to an ounce or more. A spoonful, diluted with water, is usually taken in common colds at bed time.

SUCCUS SPISSATUS ACO- NITI.

Edinb.

Insipissated juice of wolfsbane.

Bruise the fresh leaves of aconitum; and including them in a hempen bag, squeeze out their juice in a press: let the juice be evaporated in flat vessels in a vapour bath, to the consistence of pretty thick honey: An empyreuma is to be avoided by constantly stirring the mixture towards the end of the process.

After the matter has become cold, let it be put up in glazed earthen vessels, and moistened with rectified spirit of wine.

In the same manner are prepared insipissated juices of

Belladonna, or deadly nightshade.

Hyoscyamus, or henbane, and

Lactuca virosa, or wild lettuce.

IN these insipissated juices, the active parts of the plant are obtained in a concentrated state, and in a condition which admits of preparation for a considerable length of time. They furnish therefore a convenient form for exhibiting these articles which, in the practice of medicine, are more frequently used in the state of insipissated juice than any other. This is particularly the case with the hyoscyamus, which may often be advantageously employed when opium is indicated, but disagrees with the patient. But aconite and belladonna may in general, with greater advantage, be exhibited under the form of powder made from the dried leaves.

Succus

SUCCUS SPISSATUS CICUTÆ.

*Edin.**Insipidated juice of hemlock.*

Having expressed the juice of the leaves and stalks of hemlock when flowering, in the same manner as directed for that of the aconitum, evaporate it to the consistence of pretty thin honey; when it is cooled, add of the powder of the dried leaves of the plant as much as is sufficient to make it into a mass fit for forming pills. Care, however, is to be taken, that the evaporation proceed only to such length, that as much of the powder can be mixed with the insipidated juice as shall make up about a fifth part of the whole mass.

A preparation similar to this was published at Vienna by Dr Stoerk, who recommends it as an efficacious solvent in many obstinate disorders, where the common remedies avail nothing. He observes, that small doses should always be begun with, as two grains made into a pill, twice a day; and that by gradually increasing the dose, it may be given to two, three, or even four drachms a day, and continued in such quantities for several weeks: that it may be used in safety in infancy, old age, and pregnancy: that it neither accelerates nor disturbs the circulation: neither heats, nor cools; nor affects the animal functions; that it increases the secretions, and renders the mouth moist; seldom purges; very rarely vomits; sometimes augments perspiration; often produces a copious discharge of viscid urine; but in many patients does not increase any of the sensible evacuations; that it re-

moves obstructions and their consequences; relieves rheumatic pains, though of long continuance; dissolves scirrhus tumours, both internal and external; and cures dropsies and consumptions proceeding from scirrhusities; that it often dissolves cataracts, or stops their progress, and has sometimes removed the gutta serena: that inveterate cutaneous eruptions, scald heads, malignant ulcers, cancer, the malignant fluor albus and gonorrhœa of long standing, obstinate remains of the venereal disease, and caries of the bones, generally yield to it: that for the most part it is necessary to continue this medicine for a considerable time before the cure be effected, or much benefit perceived from it: that in some cases it failed of giving any relief; that he met with some persons who could not bear its effects: and that consequently there must be some latent difference in the habit, the diagnostic signs of which are at present unknown: that though it is by no means infallible any more than other medicines, yet the great number of deplorable cases which have been happily cured by it, is sufficient to recommend it to farther trials. The efficacy of this medicine is confirmed by many eminent practitioners abroad; though trials hitherto made of it in this country have not been attended with much success. Somewhat, perhaps, may depend on the time of the plant's being gathered, and the manner of the preparation of the extract. Dr Stoerk himself takes notice of some mistakes committed in this respect: some have left the herb in a heap for several days, whence part of it withered, part rotted, and the juice became thick and mucilaginous;

nous; others have taken a very large quantity of the juice and boiled it down in copper vessels with a great heat; by which means a strong fetor was diffused to a considerable distance, and the most efficacious parts dissipated: others, with officious care, have clarified the juice, and thus obtained a black tenacious extract, retaining but a small degree of the specific smell of the plant. The extract, duly prepared, according to the above prescription, is of a greenish brown colour, and a very disagreeable smell, like that of mice. But though there be reason to believe that much of the extract used here had been ill prepared, we can by no means admit that its general inefficacy was owing to this cause; for though there are not many instances of its discovering any valuable medicinal powers, there are several of its having activity enough, even in small doses, to produce alarming symptoms.

Modern practice, however, seems to hold a middle place; being neither influenced by the extravagant encomiums of Dr Stoerk, nor frightened by the wary suspicions of Dr Lewis. The inspissated

juice of the hemlock is accordingly given with freedom in a great variety of complaints, without our experiencing the wonderful effects ascribed to it by the former, or the baneful consequences dreaded by the latter. Like other preparations of this valuable herb, it is no doubt a very useful addition to our pharmacopœia; nor does its use seem to be more hazardous than that of opium and some other narcotics.

SUCCUS SPISSATUS RIBIS NIGRI.

Lond.

Inspissated juice of black-currants.

SUCCUS SPISSATUS LI. MONIS.

Lond.

Inspissated juice of lemons.

SUCCUS SPISSATUS CL. CUTÆ.

Lond.

Inspissated juice of hemlock.

THESE three are directed to be prepared in the same manner as the elder-berry juice.

C H A P. IV.

EXTRACTA ET RESINÆ.

EXTRACTS AND RESINS.

Observations on Extracts with Water.

THESE extracts are prepared by boiling the subjects in water, and evaporating the strained decoction to a thick consistence.

This process affords us some of the more active parts of the plants, free from the useless indissoluble earthy matter, which makes the largest share of their bulk. There is a great difference in vegetable substances, with regard to their fitness for this operation; some yielding to water all their virtues, and others scarce any. Those parts in which the sweet, glutinous, emollient, cooling, bitter, astringent virtues reside, are for the most part totally extracted by the boiling water, and remain almost entire on evaporating it: while those which contain the

peculiar odour, flavour, and aromatic quality, are either not extracted at all, or exhale along with the menstruum. Thus gentian root, which is almost simply bitter, yields an extract possessing in a small volume the whole taste and virtues of the root.—Wormwood, which has a degree of warmth and strong flavour joined to the bitter, loses the two first in the evaporation, and gives an extract not greatly different from the foregoing: the aromatic quality of cinnamon is dissipated by this treatment, its astringency remaining; while an extract made from the flowers of lavender and rosemary, discovers nothing either of the taste, smell, or virtues of the flowers.

General Rules for making Extracts with water.

1. It is indifferent, with regard to the medicine, whether the subject be used fresh or dry; since nothing that can be preserved in this process will be lost by drying.

With regard to the facility of extraction, there is a very considerable difference; vegetables in general giving out their virtues more

more readily when moderately dried than when fresh.

2. Very compact dry substances should be reduced into exceeding small parts, previous to the assuſion of the menſtruum.

3. The quantity of water ought to be no greater than is neceſſary for extracting the virtues of the ſubject. A difference herein will ſometimes occaſion a variation in the quality of the product; the larger the quantity of liquor, the longer time will be requiſite for evaporating it, and conſequently the more volatile parts of the ſubject will be the more diſpoſed to be diſſipated. A long-continued heat likewise makes a conſiderable alteration in the matter which is not volatile. Sweet ſubſtances, by long boiling with water, become nauſeous; and the drastic purgatives loſe their virulence, though without any remarkable ſeparation of their parts.

4. The decoctions are to be decimated by colature; and afterwards ſuffered to ſtand for a day or two, when a conſiderable quantity of ſediment is uſually found at the bottom. If the liquor poured off clear be boiled down a little, and afterwards ſuffered to cool again, it will depoſite a freſh ſediment, from which it may

be decanted before you proceed to finiſh the evaporation. The decoctions of very refinous ſubſtances do not require this treatment, and are rather injured by it; the reſin ſubſiding along with the inactive dregs.

5. The evaporation is moſt conveniently performed in broad ſhallow veſſels; the larger the ſurface of the liquor, the ſooner will the aqueous parts exhale: This effect may likewise be promoted by agitation.

6. When the matter begins to grow thick, great care is neceſſary to prevent its burning. This accident (almost unavoidable if the quantity be large, and the fire applied as uſual under the evaporating pan) may be effectually ſecured againſt, by carrying on the inſpiſſation after the common manner, no farther than to the conſiſtence of a ſyrup, when the matter is to be poured into ſhallow tin or earthen pans, and placed in an oven, with its door open, moderately heated; which acting uniformly on every part of the liquid, will ſoon reduce it to any degree of conſiſtence required. This may likewise be more ſecurely done, by ſetting the evaporating veſſel in, or ſuſpending it over, boiling water; but the evaporation is in this way very tedious.

Observations on Extracts with Reſiſed Spirit.

RECTIFIED ſpirit of wine diſſolves the eſſential oils and reſins of vegetables, and does not readily carry off the oil in its exhalation; the heat ſufficient to exhale pure ſpirit being much leſs than that in which the eſſential oils diſtil. Hence a refinous or ſpirituous ex-

tract of wormwood, contrary to that made with water, contains the warmth and flavour, as well as bitterneſs of the herb; one made from cinnamon poſſeſſes its aromatic virtue, as well as its aſtringency; and one from lavender and roſemary flowers, retains great

great part of their flavour and virtues; the volatile parts, which are carried off by water in its evaporation being left behind by the spirit.

The spirit employed for this purpose should be perfectly free from any ill flavour, which would be communicated in part to the preparation; and from any admixture of phlegm or water, which would not only vary its dissolving power, but likewise, evaporating towards the end of the inspissation, would promote the dissipation of the volatile parts of the subject. Hence, also, the subject itself ought always to be dry: those substances which lose their virtue by drying, lose it equally on being submitted to this treatment with the purest spirit.

The inspissation should be performed from the beginning, in the gentle heat of a water bath. We need not suffer the spirit to evaporate in the air: greatest part of it may be recovered by collecting the vapour in common distilling vessels. If the distilled spirit be found to have brought over any flavour from the subject, it may be advantageously reserved for the same purposes again.

It is observable, that though rectified spirit be the proper menstruum of the pure volatile oils, and of the grosser resinous mat-

ter of vegetables; and water of the mucilaginous and saline: yet these principles are, in almost all plants, so intimately combined together, that whichever of these liquors is applied at first, will take up a portion of what is directly soluble only in the other. Hence sundry vegetables, extremely resinous, and whose virtues consist chiefly in their resin, afford nevertheless very useful extracts with water, though not equal to those which may be obtained by a prudent application of spirit. Hence also, the extracts made from most vegetables by pure spirit, are not mere resins; a part of the gummy matter, if the subject contained any such, is taken up along with the resin; an admixture of great advantage to it in a medicinal view. The spirituous extracts of several vegetable substances, as mint leaves, rhubarb, saffron, and others, dissolve in water as well as in spirit.

Pure resins are prepared, by adding to spirituous tinctures of very resinous vegetables, a quantity of water. The resin, incapable of remaining dissolved in the watery liquor, separates and falls to the bottom; leaving in the menstruum such other principles of the plant as the spirit might have extracted at first along with it.

Observations on Extracts with Spirit and Water.

SUNDRY vegetables, particularly those of a resinous nature, are treated, to better advantage, with a mixture of water and spirit, than with either of them singly. The virtues of resinous woods,

barks, and roots, may indeed be in great part extracted by long boiling in fresh portions of water; but at the same time they suffer a considerable injury from the continued heat necessary for the ex-
traction

traction, and for the subsequent evaporation of so large a quantity of the fluid. Rectified spirit of wine is not liable to this inconvenience; but the extracts obtained by it from the substances here intended, being almost purely resinous, are less adapted to general use than those in which the resin is divided by an admixture of the gummy matter, of which water is the direct menstruum.

There are two ways of obtaining these compound, or gummy-resinous extracts: one, by using proof-spirit, that is, a mixture of equal parts of spirit and water, for the menstruum; the other, by

digesting the subject first in pure spirit and then in water, and afterwards uniting into one mass the parts which the two menstrua have separately extracted. In some cases, where a sufficiency of gummy matter is wanting in the subject, it may be artificially supplied, by insinuating the spirituous tincture to the consilience of a balsam, then thoroughly mixing with it a thick solution of any simple gum, as mucilage of gum arabic, and drying the compound with a gentle heat. By this method are obtained elegant gummy resins, extemporaneously miscible with water into milky liquors.

Observations on Extracts by long Digestion.

It has been observed, that the virtues of vegetable decoctions are altered by long boiling. Decoctions or infusions of drastic vegetables, by long continued boiling or digestion lose more and more of their virulence; and at the same time deposit more and more of a gross sediment, resulting probably from the decomposition of their active parts. On this foundation it has been attempted to obtain safe and mild preparations from sundry virulent drugs; and some of the chemists have strongly recommended the process, though

without specifying, or giving any intimation of, the continuance of boiling requisite for producing the due mildness in different subjects. M Baumé, in his *Elémens de Pharmacie*, has given a particular account of an extract of opium prepared on this principle; of which extract, as it is alleged to be very useful in practice, it may not be improper to give a short description: And this we shall accordingly subjoin to our account of the opium purificatum of the London college.

Observations on particular Extracts.

EXTRACTUM CACUMINIS
GENISTÆ.

Extract of Broom tops.

CHAMÆMELI.

Chamomile.

GENTIANÆ.

Gentian.

GLYCYRRHIZÆ.

Liquorice.

HELLEBORI NIGRI.

Black hellebore.

PAPAVERIS ALBI.

White poppy.

RUTÆ.

Rue.

SABINÆ.

Savin.

Lond.

Boil

Boil the article in distilled water, press out the decoction, strain it, and set it apart that the feces may subside; then evaporate it in a water bath made of a saturated solution of sea-salt, to a consistence fit for making pills.

The same kind of bath is to be used in the preparation of all the extracts, that the evaporation may be properly performed.

EXTRACTUM GENTIANÆ.

Edin.

Extract of Gentian.

Take of

Gentian root, as much as you please.

Having cut and bruised it, pour upon it eight times its quantity of water. Boil to the consumption of one half of the liquor; and strain it by strong expression. Evaporate the decoction to the consistence of thick honey, in a vapour bath.

In preparing this and every other extract, it is necessary to keep up a constant stirring towards the end of the process, in order to prevent an empyreuma, and that the extract may be of an uniform consistence, and free of clots.

In the same manner are prepared extracts of the roots of
Black Hellebore.

Liquorice.

of the leaves of

Meadow anemony.

Rue.

Sennæ.

of the flowers of

Chamomile.

and the heads of

White poppy,

ALL the above extracts contain the virtues of the vegetable in a state of tolerable perfection.

The mode of preparing these extracts directed by the London and Edinburgh Colleges is not essentially different: But some advantage will arise from employing the distilled water directed by the former; and the directions by the latter with regard to the quantity of water to be used, and the degree of boiling to be employed before expressions, are not without use.

The extract of chamomile loses in its formation the specific flavour of the plant; but it is said to furnish a bitter remarkably antiseptic, which may be given with advantage in different stomach complaints to the extent of a scruple or two, either by itself, or in conjunction with other remedies. The extract of broom tops is chiefly employed in hydropic cases; and when taken to the quantity of about a drachm is said to operate as a powerful diuretic. The extract is the only preparation of the *pulsatilla nigricans* or meadow anemone, and it seems sufficiently well suited to be brought into this form. The extract of the white poppy-heads is not perhaps superior in any respect to opium; but to those who may think otherwise, it is convenient to preserve it in this form for preparing the syrup occasionally.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

Lond.

Compound extract of Colocynth.

Take of

Pith of colocynth, cut small, six drachms;

Socotorine

Socotorine aloes, powdered, an ounce and a half;
Scammony, powdered, half an ounce;

Smaller cardamom seeds, husked and powdered, one drachm;
Proof spirit, one pint.

Digest the colocynth in the spirit, with a gentle heat, during four days. To the expressed tincture add the aloes and scammony: when these are dissolved, distil off the spirit and evaporate the water, adding the seeds towards the end to the process, so as to make a mass of a proper consistence for the formation of pills.

THIS composition answers very effectually as a cathartic, so as to be relied on in cases where the patient's life depends on that effect taking place: the dose is from sixteen grains to half a drachm. The proof spirit is a very proper menstruum for the purgative materials; dissolving nearly the whole substance of the aloes and scammony, except the impurities; and extracting from the colocynth, not only the irritating resin, but great part of the gummy matter. In former pharmacopœias three spices were employed in this composition, cinnamon, mace, and cloves: the cardamom seeds, now introduced, are preferable, on account of their aromatic matter being less volatile; though a considerable part of the flavour, even of these, is dissipated during the evaporation of the phlegmatic part of the proof spirit.

ELATERIUM.

Lond.

Elaterium.

SUCCUS SPISSATUS CUCUMERIS.

Ed.

Insipidated juice of wild cucumbers, commonly called Elaterium.

Slit ripe wild cucumbers, and pass the juice, very slightly pressed, through a fine hair sieve, into a glass vessel: boil it a little and set it by for some hours until the thicker part has subsided. Pour off the thinner part swimming at the top, and separate the rest by filtering: cover the thicker part, which remains after filtration, with a linen cloth, and dry it with a gentle heat.

WHAT happens in part in preparing the extract of hemlock, happens in this preparation completely, viz. the spontaneous separation of the medicinal matter of the juice on standing for a little time: and the case is the same with the juices of several other vegetables, as those of arum-root, iris-root, and bryony root. Preparations of this kind have been commonly called *scule*. The filtration above directed, for draining off such part of the watery fluid as cannot be separated by decantation, is not the common filtration through paper, for this does not succeed here: The grosser parts of the juice, falling to the bottom, form a viscid cake upon the paper, which the liquid cannot pass through. The separation is to be attempted in another manner, so as to drain the fluid from the top: This is effected by placing one end of some moistened strips or woollen cloth, skins of cotton, or the like, in the juice,

juice and laying the other end over the edge of the vessel, so as to hang on the outside down lower than the surface of the liquor: by this management the separation succeeds in perfection.

Elatarium is a very violent cathartic. Previous to its operation, it generally excites considerable sickness, and frequently produces severe vomiting: Hence it is seldom employed till other remedies have been tried in vain. In some instances of ascites it will produce a complete evacuation of water where other cathartics have had no effect. Two or three grains are in general a sufficient dose. The best mode of exhibiting it is by giving only half a grain at a time, and repeating that dose every hour till it begins to operate.

EXTRACTUM HÆMATOXYLLI, sive LIGNI CAMPECHENSIS.

Lond.
Extract of Logwood.

Take of

Shavings of logwood, one pound.
Boil it four times, or oftener, in a gallon of distilled water, to one half; then, all the liquors being mixed and strained, boil them down to a proper consistence.

Edin.

It is to be prepared in the same manner as extract of Jalap.

THE extract of logwood has been used for a considerable time in some of our hospitals. It has an agreeable sweet taste, with some degree of astringency; and hence becomes serviceable in diarrhoeas, for moderately constringing the intestines and orifices of the smaller vessels. From a scruple to half a

drachm of it may be given five or six times a day. During the use of this medicine, the stools are frequently tinged red, which has occasioned the patient to be alarmed, as if the colour proceeded from blood: the practitioner therefore ought to caution him against any surprise of this kind.

The active parts of the logwood are difficultly extracted by means of water alone; Hence the Edinburgh college call in the aid of spirit of wine, directing this extract to be prepared in the same manner as that of jalap, afterwards to be mentioned.

EXTRACTUM CINCHONÆ, sive CORTICIS PERUVIANI.

Nl.

Lond.

Extract of Peruvian bark.

Take of

Peruvian bark, coarsely powdered, one pound;

Distilled water, twelve pints.

Boil it for an hour or two and pour off the liquor, which, while hot, will be red and pellucid; but, as it grows cold, will become yellow and turbid. The same quantity of water being again poured on, boil the bark as before, and repeat this boiling until the liquor remains clear when cold. Then reduce all these liquors, mixed together and strained, to a proper thickness, by evaporation.

This extract must be prepared under two forms; one *soft*, and fit for making pills: the other *hard*, that it may be reducible to a powder.

EX.

**EXTRACTUM CINCHONÆ
sive CORTICIS PERUVIANI
CUM RESINA.**

Lond.

*Extract of Peruvian bark with the
resin.*

Take of

Peruvian bark, reduced to coarse
powder, one pound;

Rectified spirit of wine, four
pints.

Digest it for four days, and pour
off the tincture; boil the re-
siduum in ten pints of distilled
water to two; then strain the
tincture and decoction separate-
ly, evaporating the water from
the decoction, and distilling off
the spirit from the tincture, un-
til each begins to be thickened.
Lastly, mix the spirituous with
the aqueous extract, and by
evaporation make it of a consi-
stence fit for forming pills.

**EXTRACTUM CORTICIS
PERUVIANI, sive Cinchonæ.**

Edinb.

Extract of Peruvian bark.

It is to be prepared in the same
manner as the extract of jalap.

Peruvian bark is a resinous drug:
the resin melts out by the heat,
but is not perfectly dissolved by
the water; hence, it separates as
the decoction cools, renders the li-
quor turbid, and in part falls to the
bottom, as appears manifestly on
examining the sediment. This ex-
tract might be made to better ad-
vantage by the assistance of proof
spirit. But most of the spirits
which are generally employed
for this process among us, are ac-
companied with some degree of a
bad flavour: this adheres most
strongly to the phlegmatic part of

the spirit, which evaporating last,
must communicate this ill flavour
to the extract; which is a circum-
stance of very great consequence,
as this medicine is designed for
stomachs that are too weak to
bear a due quantity of bark in
substance. Ten or twelve grains
of the extract are reckoned equi-
valent to about half a drachm
of the bark itself.

In the Peruvian bark, we may
readily distinguish two different
kinds of tastes, an astringent and
a bitter one; the former resides
principally in the resinous matter,
and the latter chiefly in the gum-
my. The watery extract is bitter,
but has only a small degree of
astringency. The pure resin, on
the other hand, is strong in astring-
ency, and weak in bitterness.
Both qualities are united in the
extract with the resin; which ap-
pears to be the best kind of extract
that can be obtained from this
valuable drug.

EXTRACTUM CASCARILÆ.

LÆ.

Lond.

Extract of Cascarella.

It is to be prepared in the same
manner, as the extract of Peru-
vian bark with the resin.

This extract possesses in a con-
centrated state the active consti-
tuent parts of the cascarella, and
has accordingly been already re-
ceived into several of the best
foreign pharmacopœias. In some
of these, as the Pharmacopœia
Suecica, it is a mere watery ex-
tract: but in others, as the Phar-
macopœia Rossica, spirits and wa-
ter are conjoined.

EXTRACTUM JALAPII.

*Lond.**Extract of Jalap.*

It is to be prepared in the same manner as the extract of Peruvian bark with the resin.

EXTRACTUM JALAPPÆ.

*Edinb.**Extract of Jalap.*

Take of

Jalap root, one pound ;

Rectified spirit of wine, four pounds.

Digest four days, and pour out the tincture. Boil the remaining magma in ten pounds of water to two pounds ; then strain the decoction, and evaporate it to the consistence of pretty thin honey. Draw off the spirit from the tincture by distillation till what remains becomes thick. Then mix the liquors thus inspissated ; and keeping them constantly stirring, evaporate to a proper consistence.

If the spirituous tincture were inspissated by itself, it would afford a resinous mass, which, unless thoroughly divided by proper admixtures, occasions violent griping, and yet does not prove sufficiently cathartic ; the watery decoctions yield an extract which operates very weakly : both joined together, as in this preparation, compose an effectual and safe purge. The mean dose of this extract, is twelve grains.

This method of making extracts might be advantageously applied to several other resinous substances, as the dry woods, roots, barks, &c.

EXTRACTUM SENNÆ.

*Lond.**Extract of Senna.*

Take of

Senna, one pound ;

Distilled water, one gallon ;

Boil the senna in the distilled water, adding after its decoction a little rectified spirit of wine. Evaporate the strained liquor to a proper thickness.

This extract had no place in our former pharmacopœias, but may be considered as an useful addition.

The resinous parts of senna are in so small a proportion to the gummy, that they are readily boiled out together. The spirit may be added when the decoction is reduced to one half or to three pints.

This extract is given as a gentle purgative in a dose of from ten grains to a scruple ; or, in less quantity, as an assistant to the milder laxatives.

OPIUM PURIFICATUM.

*Lond.**Purified Opium.*

Take of

Opium, cut into small pieces, one pound ;

Proof spirit of wine, twelve pints. Digest with a gentle heat, now and then stirring the liquor, till the opium be dissolved. Filter the tincture, and distil off the spirit, till the extract acquires proper consistence.

Purified opium must be kept in two forms ; one *soft*, proper for forming into pills ; the other *hard*,

hard, which may be reduced into powder.

Edin.

Take of

Opium cut into pieces, one pound;

Proof spirit twelve pounds.

Digest with a gentle heat till the opium be dissolved, stirring the mixture now and then. Strain the liquor through a bag, and reduce it by evaporation to a proper consistency.

Opium was formerly purified by means of water, and in this state it had the name in our pharmacopias of *extractum thebaicum*. But proof spirit has been found, by experience, to be the best menstruum for opium, dissolving three-fourths of dried opium, which is much more than is taken up either by rectified spirit or by water separately. Hence we obtain the constituents of opium entirely free from any adhering impurities. It has, however, been imagined that some particular advantages arise from the parts which are extracted by water, especially after long digestion; and accordingly the following extract of opium has been recommended by Mr Baumé.

Extract of Opium prepared by long digestion.

Let five pounds of good opium, cut in pieces, be boiled about half an hour, in twelve or fifteen quarts of water: strain the decoction, and boil the remainder once or twice in fresh water, that so much of the opium as is dissoluble in water may be got out. Evaporate the strained decoctions to about six quarts;

which being put into a tin curbit, placed in a sand-bath keep up such a fire as may make the liquor nearly boil, for three months together if the fire is continued day and night, and for six months if it is intermitted in the night; filling up the vessel with water in proportion to the evaporation, and scraping the bottom with a wooden spatula from time to time, to get off the sediment which begins to precipitate after some days digestion. The sediment needs not to be taken out till the boiling is finished; at which time the liquor is to be strained when cold, and evaporated to an extract of a due consistence for being formed into pills.

The author observes, that by keeping the liquor strongly boiling, the tedious process may be considerably expedited, and the six months digestion reduced to four months; that in the beginning of the digestion, a thick, viscous, oily matter rises to the top, and forms a tenacious skin as the liquor cools; this is supposed to be analogous to essential oils, though wanting their volatility: that the oil begins to disappear about the end of the first month, but still continues sensible till the end of the third, forming oily clouds as often as the liquid cools: that the resin at the same time settles to the bottom in cooling, preserving for a long while its resinous form, but by degrees becoming powdery, and incapable of being any longer softened, or made to cohere by the heat: that when the process is finished, part of it still continues a perfect resin, dissoluble in spirit of wine, and part an indissoluble

dis soluble powder: that when the digested liquor is evaporated to about a quart, and set in the cold till next day it yields a brownish earthy-saline matter, called the essential salt of opium, in figure nearly like the sedative salt obtained from borax, intermixed with small needled crystals. He gives an account of his having made this preparation six or seven times. The vessel he used was about two inches and a half diameter in the mouth: the quantity of water evaporated was about twenty-four ounces a day, and from a hundred and thirty to a hundred and forty quarts during the whole digestion. Out of sixty-four ounces of opium, seventeen ounces remained undissolved in the water; the quantity of resinous matter precipitated during the digestion, was twelve ounces: from the liquor, evaporated to a quart, he obtained a drachm of essential salt, and might, he says, have separated more; the liquor being then further evaporated to a pilular consistence, the weight of the extract was thirty-one ounces.

It is supposed, that the narcotic virtue of opium resides in the oily and resinous parts; and that the gummy extract, prepared by the above process, is endowed with the calming, sedative, or anodyne powers of the opium, divested of the narcotic quality as it is of the smell, and no longer productive of the disorders which opium itself, and the other preparations of it, frequently occasion. A case is mentioned, from which the innocence and mildness of the medicine are apparent; fifty grains having been taken in a day, and found to agree well, where the common opiate preparations could not be borne. But what share it

possesses of the proper virtues of opium is not so clear; for the cure of convulsive motions of the stomach, and vomitings, which at length happened after the extract had been continued daily in the above doses for several years (*plusieurs années*) cannot perhaps be ascribed fairly to the medicine.

If the theory of the process, and of the alteration produced by it in the opium, be just, a preparation equivalent to the above may be obtained in a much shorter time. If the intention is to separate the resinous and oily parts of opium, they may be separated by means of pure spirit of wine, in as many hours as the digestion requires months. The separation will also be as complete, in regard to the remaining gum, though some part of the gum will in this method be lost, a little of it being taken up by the spirit along with the other principles.

In what particular part of opium its peculiar virtues reside, has not been incontestably ascertained; but this much seems clear from experiment, that the pure gum, freed from all that spirit can dissolve, does not differ essentially in its soporific power from the resinous part.

There are grounds also to presume, that by whatever means we destroy or diminish what is called the narcotic, soporific, virulent quality of opium, we destroy or diminish its salutary operation. For the ill effects which it produces in certain cases, seem to be no other than the necessary consequences of the same power, by which it proves so beneficial in others.

EX.

EXTRACTUM ABSINTHIL.

*Succ.**Extract of Wormwood.*

Take any quantity of the tops of wormwood, and pour upon it double its weight of water. Boil it for a short time over a gentle fire, then press out the liquor. Boil the residuum again in a fresh quantity of water, and after expression, strain it. Let the strained liquor be evaporated in a water-bath to a proper consistence.

In this extract we have one of the strongest vegetable bitters in its most concentrated state; and though it is not superior to the extract of gentian, yet it furnishes a good variety, and is a more agreeable form for exhibiting the wormwood than that of strong tincture.

SUCCUS LIQUORITIÆ DEPURATUS.

*Dan.**Refined Liquorice.*

Take any quantity of Spanish liquorice, cut it into small fragments, dissolve it in tepid water, and strain the solution. Let the liquor be poured off from the feculent part after it has subsided, and be inspissated by a gentle heat.

The extract of liquorice already mentioned (page 293), when it is prepared with due skill and attention,

is unquestionably an article superior to this; but it is very rarely met with in the shops of our druggists or apothecaries, as prepared by themselves. In its place they very commonly employ either the extract brought from Spain, or that prepared by the makers of liquorice at home; both of which generally abound with impurities. It has even been said, that a portion of sand is not unfrequently mixed with it, to increase the weight: but whether the impurities arose from this cause, or from the slovenly mode of preparing it, considerable advantage must arise from freeing it from all these, before it be employed for any purpose in medicine. In modern practice, it is frequently used, in troches and pills, and for suspending powders in water; such as the powder of Peruvian bark: and the powder of bark when thus suspended, is in general taken more readily by children than in any other form. Hence considerable advantage must arise from a proper and easy mode of purifying it, which the above process affords.

The chapter on extracts and refins in the London pharmacopœia is concluded with the two following general directions:

1. All the extracts, during their inspissation, must be constantly or at least frequently stirred.
2. On all the softer watery extracts, a small quantity of spirit of wine must be sprinkled.

C H A P. V.

OLEA EXPRESSA.

EXPRESSED OILS.

EXPRRESSED oils are obtained chiefly from certain seeds and kernels of fruits, by pounding them in a stone mortar, or, where the quantities are large, grinding them in mills, and then including them in a canvas bag, which is wrapt in a hair-cloth, and strongly pressed between iron plates. The canvas if employed alone would be squeezed so close to the plates of the press, as to prevent the oil from running down: by the interposition of the hair-cloth a free passage is allowed it.

Sundry machines have been contrived, both for grinding the subject and pressing out the oil, in the way of business. To facilitate the expression, it is usual to warm either the plates of the press, or the subject itself after grinding, by keeping it stirring in a proper vessel over the fire; the oil, liquefied by the heat, separates more freely and more plentifully. When the oil is designed for medicinal purposes, this practice is not to be allowed; for heat, especially if its degree be sufficient to be of any considerable advantage for promoting the separation, renders the oil less soft and palatable, impresses a disagreeable flavour, and increases its disposition

to grow rancid: hence the collectors both of London and Edinburgh expressly require the operation to be performed without heat.

Nor are the oils to be kept in a warm place after their expression. Exposed for a few days to a heat no greater than that of the human body, they lose their emollient quality, and become highly rancid and acrimonious. Too much care cannot be taken for preventing any tendency to this acrid irritating state in medicines, so often used for abating immoderate irritation.

So much are these oils disposed to this injurious alteration, that they frequently contract an acrimony and rancidity while contained in the original subjects. Hence great care is requisite in the choice of the unctuous seeds and kernels, which are often met with very rancid: almonds are particularly liable to inconveniences of this kind.

Expressed oils are prepared for mechanic uses from sundry different subjects, as nuts, poppy-seed, hemp-seed, rape-seed, and others. Those directed for medicinal purposes in the London and Edinburgh pharmacopœias are the following:

OLEUM

OLEUM AMYGDALÆ.*Lond.**Oil of Almonds.*

Pound fresh almonds either sweet or bitter in a mortar; and then press out the oil in a cold press.

OLEUM AMYGDALARUM.*Edin.**Oil of Almonds.*

Having bruised almonds in a stone mortar put them in a hempen bag, and without heat press out the oil with a screw press.

In the same manner are to be expressed.

OLEUM ESEMINIBUS LINI*Lond. Edin.**Oil of Linseed.***OLEUM E SEMINIBUS RICINI prius cortice nudatis.***Lond. Edin.**Oil of Castor.***OLEUM E SEMINIBUS SENAPEOS.***Lond.**Oil of mustard seed.*

THE oil of almonds is prepared from the sweet and bitter almonds indifferently; the oils obtained from both sorts being exactly the same. Nor are the differences of the other oils very considerable, the discriminating qualities of the subjects not residing in the oils that are thus obtained by expression. The oil of linseed acquires indeed some peculiarities from containing a proportion of vegetable mucilage; but the oil of mustard seed is as soft, insipid, and void of pungency as that of sweet almonds, the pungency of the mustard remaining entire in the cake left after the

expression. The several oils differ in some of their properties from each other; but in medicinal qualities they appear to be all nearly alike, and agree in one common emollient virtue. They soften and relax the solids, and obtund acrimonious humours; and thus become serviceable internally in pains, inflammations, heat of urine, hoarseness, tickling coughs, &c. in glysters, for lubricating the intestines, and promoting the ejection of indurated feces; and in external applications, for tension and rigidity of particular parts. Their common dose is half an ounce: in some cases, they are given to the quantity of three or four ounces. The most commodious forms for their exhibition, we shall see hereafter in the chapter on Emulsions.

Palma Christi, or castor oil, as has already been observed in the *Materia Medica*, under the article *Ricinus*, is a gentle and useful purgative: it generally produces its effects without griping, and may be given with safety where acrid purgatives are improper. With adults, from half an ounce to an ounce is generally requisite for a dose. This article, however, is very seldom prepared by our apothecaries, being in general imported from the West Indies.

The Edinburgh College have added the following note.

Castor oil may also be prepared by boiling the bruised seeds in water.

During the boiling, the oil separates and swims at the surface. The oil thus obtained is much purer and is capable of being kept longer than the other obtained by expression; because the water detains the mucilage which is in large quan-

quantity in the expressed oil, and which disposes it to spoil sooner.

OLEUM CACAO.

Succ.
Oil of Chocolate Nuts.

Express the oil from the nuts slightly toasted, and freed from their coverings.

In this oil we have the nutritious part of chocolate, free from those aromatics with which it is united in the state in which it is kept in our shops. Although under the form of chocolate it fits perhaps more easily on the stomach than in most other forms; yet where, from any particular circumstance, aromatics are contraindicated, the oil in its pure state gives us an opportunity of employing in different ways this mild nutritious article.

OLEUM E SEMINIBUS HY- OSCYAMI.

Succ.
Oil of Hyoscyamus.

This oil is directed to be obtained by expression from the seeds of the hyoscyamus, in the same manner as that of almonds.

Of the narcotic powers of the hyoscyamus some observations have already been offered. This oil, although an expressed one, is said to retain these virtues; and accordingly it has entered the composition of some anodyne ointments and plasters. When however the sedative power of hyoscyamus is wanted under the form of oil, it may be best obtained from impregnating olive oil by the leaves of the plant.

OLEUM OVI.

Succ.
Egg oil.

Take any quantity of fresh eggs, boil them till they be quite hard, then take out the yolks, break them in pieces, and roast them gently in a frying-pan, till they feel greasy when pressed between the fingers; put them, while warm, into a hair bag, and express the oil.

THE yolk of the egg is well known to be a mild nutritious substance: but notwithstanding the many virtues at one time attributed to it, of being paregoric and styptic, when externally applied; and of being useful in stomach complaints, dysentery, and different affections of the alimentary canal, when taken internally: it is however much to be doubted whether any particular purpose in medicine will be answered by this expressed oil: but as it holds a place in most of the foreign pharmacopœias of modern date, it may justly be considered as deserving some attention.

Notwithstanding the justice of the observation respecting the great similarity of expressed oils in general, yet there can be no doubt, that in some instances they obtain a peculiar impregnation. This manifestly appears in the oleum ricini, and some of the others. Indeed oils expressed from aromatic substances, in general retain some admixture of the essential oil of the subject from which they are expressed. Nor is this surprising, when we consider that in some cases the essential oil exists in a

separate

ſeparate ſtate even in the growing plant.

The rinds of oranges, lemons, and citrons, yield by a kind of expreſſion, their eſſential oils almoſt pure, and nearly ſimilar to thoſe which are obtained from them by diſtillation. The eſſential oil, in which the fragrance and aromatic warmth of theſe fruits reſide, are contained in numerous little veſicles, which may be diſtinguiſhed by the naked eye, ſpread all over the ſurface of the peel. If the rind be cut in ſlices, and the ſlices ſeparately doubled or bent in different parts, and ſqueezed between the fingers, the veſicles burſt at the bending, and diſcharge the oil in a number of ſmall ſlender jets.

A glaſs plate being ſet upright in a glaſs or porcelain veſſel, and the ſlices ſqueezed againſt the plate, the little jets unite into drops upon the plate, and trickle down into the veſſel beneath. Although this proceſs affords the true native oil,

in the ſame ſtate wherein it exiſted in the ſubject, unaltered by fire or other agents, it is not practicable to advantage, unleſs where the fruit is very plentiful; as only a ſmall part of the oil it contains can thus be extracted or collected.

The oil is more perfectly ſeparated by rubbing the rind upon a lump of ſugar. The ſugar, by the inequality of its ſurface, produces the effect of a rasp, in tearing open the oily veſicles; and in proportion as the veſicles are opened, the ſugar imbibes the oil. When the outward part of the lump is ſufficiently moiſtened, it is ſcraped off, and the operation continued on the freſh ſurface. The oil thus combined with the ſugar, is fit for moſt of the uſes to which it is applied in a fluid ſtate; and indeed the pure eſſential oils, obtained by diſtillation, are often purpoſely mixed with ſugar to render their uſe the more commodious.

C H A P. VI.

O L E A E S S E N T I A L I A.

E S S E N T I A L O I L S.

ESSENTIAL oils are obtained only from odoriferous substances; but not equally from all of this class, nor in quantity proportional to their degree of odour. Some, which, if we were to reason from analogy, should seem very well fitted for this process, yield extremely little oil, and others none at all. Roses and chamomile flowers, whose strong and lasting smell promises abundance, are found to contain but a small quantity of oil: the violet and jessamine flower, which perfume the air with their odour, lose their smell upon the gentlest cōction, and do not afford the least oil on being distilled, unless immense quantities are submitted to the operation at once; while savin, whose disagreeable scent extends to a great distance, gives out the largest proportion of oil of almost any vegetable known.

Nor are the same plants equally fit for this operation, when produced in different soils or seasons, or at different times of their growth. Some yield more oil if gathered when the flowers begin to fall off than at any other time. Of this we have examples in laven-

der and rue; others, as sage, afford the largest quantity when young, before they have sent forth any flowers; and others, as thyme, when the flowers have just appeared. All fragrant herbs yield a larger proportion of oil when produced in dry soils and warm summers, than in opposite circumstances. On the other hand, some of the disagreeable strong-scented ones, as wormwood, are said to contain most oil in rainy seasons, and when growing in moist rich grounds.

SEVERAL of the chemists have been of opinion, that herbs and flowers moderately dried, yield a greater quantity of essential oil, than if they were distilled when fresh. It is supposed, that the oil being already blended, in fresh plants, with a watery fluid, great part of it remains diffused through the water after the distillation, divided into particles too minute to unite and be collected; whereas in drying, the oily parts, on the exhalation of the moisture which kept them divided and dispersed, run together into globules, which have little disposition to mix with

with watery fluids, and easily separate from the water employed in the distillation.

This theory, however does not appear to be quite satisfactory; for though the oil be collected in the subject into distinct globules, it does not rise in that form, but is resolved into vapor, and is blended and coagitated by the heat with the vapour of the water; and if the oil in a dry plant was less disposed to unite with aqueous fluids than in a fresh one, the dry ought to yield a weaker infusion than the fresh; the contrary of which is generally found to obtain. As the oil of the dry plant is most perfectly extracted, and kept dissolved by the water before the distillation, it is difficult to conceive any reason why it should have a greater tendency to separate from the water afterwards.

The opinion of dry plants yielding most oil, seems to have arisen from an observation of Hoffman, which has probably been misunderstood: "A pound (he says) of dry spike flowers yields an ounce of oil; but if they were distilled fresh, they would scarcely yield above half an ounce; and the case is the same in balm, sage, &c. The reason is, that in drying, the watery humidity exhales; and as from two pounds of a fresh plant we do not obtain above one pound of dry, and little of the subtle oil evaporates in the drying, it follows, that more oil ought to be afforded by the dry than by the fresh." The meaning of which seems to be no more than this, that if two pounds of a fresh plant are by drying reduced to one, without any loss of the oil, then the one pound dry ought

to be equivalent to the two fresh. A late writer quotes an experiment of Neumann, which appears to be misunderstood in the same manner; for Neumann, in the place referred to, says only, that dry wormwood is found to yield much more oil than an *equal weight* of the fresh plant. Trials are yet wanting in which fresh and dry plants have been brought to a fair comparison, by dividing a quantity of the subject into two equal weights, and distilling one while fresh, and the other after it has been carefully and moderately dried.

But whatever may be the effect of moderate exiccation, it is certain, that if the drying be long continued, the produce of oil will be diminished, its colour altered, and its smell impaired.

With regard to the proportion of water to be employed, if whole plants, moderately dried, are used, or the shavings of woods, as much of either may be put into the vessel as, lightly pressed, will occupy half its cavity; and as much water may be added, as will fill two thirds of it. The water and ingredients, altogether, should never take up more than three-fourths of the still; there should be liquor enough to prevent any danger of an empyreuma, but not so much as to be apt to boil over into the receiver.

The maceration should be continued so long, that the water may fully penetrate the parts of the subject. To promote this effect, woods should be thinly shaved across the grain, or sawn, roots cut transversely into thin slices, barks reduced into coarse powder, and seeds slightly bruised. Very compact and tenacious substances require the maceration to be continued

tinued a week or two, or longer; for those of a softer and looser texture, two or three days are sufficient; while some tender herbs and flowers not only stand in no need of maceration, but are even injured by it.

Whether the addition of sea-salt, which has been recommended, be of any real service, is much to be doubted. The use generally assigned to it are, to penetrate and unlock the texture of the subject more effectually than simple water could do; and to prevent the fermentation or putrefaction, which the matter is apt to run into during the length of time for which the maceration is often continued. But sea salt seems rather to harden and constrict, than to soften and resolve, both vegetable and animal subjects: and if it prevents putrefaction, it must, on that very account, be injurious rather than of service. The resolution here aimed at, approaches near to a beginning putrefaction; and saline substances, by retarding this, prolong the maceration far beyond the time that would otherwise be necessary. It is in the power of the operator, when he perceives the process coming near the pitch, to put a stop to it at pleasure, by proceeding immediately to distillation; by this means the whole affair will be finished in a very little time, with at least equal advantage in every other respect; provided the manual operations of pounding, rasping, and the like, which are equally necessary in either case, be strictly complied with.

Some chemists pretend, that by the addition of salts and acid spirits, they have been enabled to gain more oil from certain vegetable matters than could possibly be got from them without such

assistance. Experiments made on purpose to settle this point seem to prove the contrary; this at least is constantly found to be true, that where there is any reason to think the produce greater than usual, the quality of the oil is proportionally injured. The quantity of true essential oil in vegetables can by no means be increased; and what is really contained in them may be easily separated without any addition of this kind. All that saline matters can do in this respect, is, to make the water susceptible of a greater degree of heat than it can sustain by itself, and thus enable it to carry up a gross unctuous matter, not volatile enough to rise with pure water: this gross matter, mixing with the pure oil, increases the quantity, but at the same time must necessarily debase its quality. Indeed, when water alone is used, the oil which comes over about the end of the operation is remarkably less fragrant and of a thicker consistence, than that which rises at the beginning; and if it be distilled a second time, with a gentle heat, it leaves a large quantity of gross almost insipid resinous matter behind.

The choice of proper instruments is of great consequence for the performance of this process to advantage. There are some oils which pass freely over the swan neck of the head of the common still: others, less volatile, cannot easily be made to rise so high. For obtaining these last, we would recommend a large low head, having a rim or hollow canal round it: in this canal the oil is detained on its first ascent, and thence conveyed at once into the receiver, the advantages of which are sufficiently obvious.

With regard to the fire, the opera-

rior ought to be expeditions in raising it at first, and to keep it up during the whole process, of such a degree only, that the oil may freely distil; otherwise the oil will be exposed to an unnecessary heat; a circumstance which ought as much as possible to be avoided. Fire communicates to all these oils a disagreeable impregnation, as is evident from their being much less grateful when newly distilled, than after they have stood for some time in a cool place; and the longer the heat is continued, the more alteration it must produce in them.

The greater number of oils require for their distillation the heat of water strongly boiling: but there are many also which rise with a heat considerably less; such as those of lemon and citron peel, of the flowers of lavender and rosemary, and of almost all the more odoriferous kinds of flowers. We have already observed, that these flowers have their fragrance much injured, or even destroyed, by beating or bruising them; it is impaired also by the immersion in water in the present process, and the more so in proportion to the continuance of the immersion and the heat: hence oils, distilled in the common manner, prove much less agreeable in smell than the subjects themselves. For the distillation of substances of this class, another method has been contrived; instead of being immersed in water, they are exposed only to its vapour. A proper quantity of water being put into the bottom of the still, the odoriferous herbs or flowers are laid lightly in a basket, of such a size that it may enter into the still, and rest against its sides, just above the water. The head being then fitted on, and the water made to boil, the steam, percolat-

ing through the subject, imbibes the oil, without impairing its fragrance, and carries it over into the receiver. Oils thus obtained possess the odour of the subject in an exquisite degree, and have nothing of the disagreeable scent perceivable in those distilled by boiling them in water in the common manner.

It may be proper to observe, that those oils which rise with a less heat than that of boiling water, are generally called, by the chemical and pharmaceutical writers, *light* oils; and those which require the heat of water strongly boiling, are called *ponderous*. We have avoided these expressions, as they might be thought to relate to the comparative *gravities* of the oils; with which the volatility or fixeness have no connection. Olive oil is lighter than most of the essential oils; but the heat requisite to make it distil exceeds that in which the heaviest essential oil distils, considerably more than the heat of boiling water exceeds that of ice.

The water employed in the distillation of essential oils always imbibes some portion of the oil; as is evident from the smell, taste, and colour, which it acquires. It cannot, however retain above a certain quantity; and therefore, such as has been already used and consequently saturated with oil, may be advantageously employed, instead of common water, in a second, third, or any future distillation of the same subject.

Some late chemical writers recommend, not the water which comes over, but that which remains in the still, to be used a second time. This can be of no service: as containing only such parts of the vegetable as are incapable of arising

arising in distillation, and which serve only to impede the action of the water as a menstruum, and to endanger an empyreuma.

After the distillation of one oil, particular care should be taken to clean the worm before it be employed in the distillation of a different plant. Some oils, those of wormwood and aniseeds for instance, adhere to it so tenaciously, as not to be melted out by heat, or washed off by water: in these cases the best way of cleaning the worm is to run a little spirit of wine through it.

Essential oils, after they are distilled, should be suffered to stand for some days in vessels loosely covered with paper, till they have lost their disagreeable fiery odour and become limpid: then put them up in small bottles, which are to be kept quite full, closely stopped, in a cool place: with these cautions, they will retain their virtues in perfection for many years.

When carelessly kept, they gradually lose their flavour, and become gross and thick. Some chemists endeavour to recover them after they have undergone this change, by grinding them with about thrice their weight of common salt, then adding a large proportion of water, and distilling them afresh: the purer part arises thin and limpid, possessing a great degree of the pristine smell and taste of the oil. This rectification, as it is called, succeeds equally well without the salt: the oils, when thus altered, are nearly in the same state with the turpentine, and other thickened oily juices, which readily yield their purer oil in distillation with water alone.

When essential oils have either in part or entirely lost their smell

they may be put into the still with fresh ingredients for distilling the same oil, by which means they are said to satiate themselves anew with the odorous matter, and become entirely renovated.

Essential oils, medicinally considered, agree in the general qualities of pungency and heat; in particular virtues, they differ as much as the subject from which they are obtained, the oil being the direct principle in which the virtues, or at least a considerable part of the virtues, of the several subjects reside. Thus the carminative virtue of the aromatic seeds, the diuretic of juniper berries, the emmenagogue of safin, the nervine of rosemary, the stomachic of mint, the antiscorbutic of scurvy-grass the cordial of aromatics, &c. are supposed to be concentrated in their oil.

There is another remarkable difference in essential oils; the foundation of which is less obvious, viz. the degree of their pungency and heat. These are by no means in proportion, as might be expected, to those of the subject they were drawn from. The oil of cinnamon, for instance, is very pungent and fiery; in its undiluted state it is almost caustic; whereas cloves, a spice which in substance is far more pungent than the other, yields an oil which is far less so. This difference seems to depend partly on the quantity of oil afforded, cinnamon yielding much less than cloves, and consequently having its active matter concentrated into a smaller volume; partly, on a difference in the nature of the active parts themselves; for though essential oils contain always the specific odour and flavour of their subjects, whether grateful or un-

grateful, they do not always contain the whole pungency : this resides frequently in a more fixed resinous matter, and does not arise with the oil. After the distillation of cloves, pepper, and some other spices, a part of their pungency is found to remain behind : a simple tincture of them in rectified spirit of wine is even more pungent than their pure essential oils.

The more grateful oils are frequently used for reconciling distillat medicinal medicines to the stomach. It has been customary to employ them as correctors for the resinous purgatives ; an use which they do not seem to be well adapted to. All the service they can here be of, is, to make the resin fit more easily at first on the stomach : far from abating the irritating quality on which the virulence of its operation depends, these pungent oils superadd a fresh stimulus.

Essential oils are never given alone, on account of their extreme heat and pungency : which in some is so great, that a single drop let fall upon the tongue, produces a gangrenous eschar. They are readily imbibed by pure dry sugar, and in this form may be conveniently exhibited. Ground with eight or ten times their weight of sugar, they become able in aqueous liquors, and may be thus diluted to any assigned degree. Mucilages also render them miscible with water into an uniform milky liquor. They dissolve likewise in spirit of wine ; the more fragrant in equal weight, and almost all of them in less than four times their own quantity ; these solutions may be either taken on sugar, or mixing with syrups, or the like : on mixing them with

water, the liquor grows milky, and the oil separates.

The more pungent oils are employed externally against paralytic complaints, numbness, pains, and aches, cold tumours, and in other cases where particular parts require to be heated or stimulated. The tooth ach is sometimes relieved by a drop of these almost caustic oils, received on cotton, and cautiously introduced into the hollow tooth.

OLEUM ESSENTIALE.

Lond.

Essential oil.

<i>Anisi,</i>	of Anise,
<i>Carui,</i>	Caraway
<i>Lavendulæ,</i>	Lavender
<i>Menthe piperitiidis,</i>	Peppermint
<i>Menthe sativæ,</i>	Spearmint
<i>Origani,</i>	Origanum
<i>Pulegii,</i>	Pennyroyal
<i>Rorismarini,</i>	Rosemary
<i>Bacca juniperi,</i>	Juniper berry
<i>Radicis cassiæ,</i>	Sassafras root

Let these oils be drawn off by distillation, from an alembic with a large refrigeratory ; but, to prevent an empyecuma, water must be added to the ingredients ; in which they must be macerated before distillation.

The water which comes over with the oil in distillation is to be kept for use.

OLEA ESSENTIALIA.

Edinb.

Essential oils.

<i>Menthe sativæ,</i>	of Spearmint
<i>Menthe piperitiidis,</i>	Peppermint
<i>Sabinæ,</i>	Savin
<i>Rorismarini,</i>	Rosemary
<i>Lavendulæ,</i>	Lavender

Anisi,

*Anise.**Anise*

Baccarum juniperi, Juniper-berries
Radix sassafras, Sassafras root
Pimenta, Jamaica pepper.

These are prepared almost in the same manner as the simple distilled waters, excepting that for procuring the oil a somewhat less quantity of water is to be used. Seeds and woody matters are first to be bruised or rasped. The oil rises with the water; and as it is lighter or heavier, swims on the surface, or sinks to the bottom, and is afterwards to be separated.

It is, however, to be remarked, that, in preparing these distilled waters and oils, so many varieties must necessarily take place from the goodness of the subject itself, its texture, the time of the year, and such like circumstances, that a certain and general rule, which should strictly apply to each, can scarcely be laid down; wherefore we have only explained the general method, leaving particular circumstances to be varied by the judgement of the operator.

To the directions for preparing these essential oils given by the London and Edinburgh colleges, we shall here next subjoin a few remarks on their medical properties.

OLEUM ESSENTIALE SEMINUM ANISI.

Lond. Edin.

Essential Oil of Aniseeds.

This oil possesses the taste and smell of the aniseeds in perfection. It is one of the mildest of the distilled oils; 15 or 20 drops may be taken at a time without danger,

though common practice rarely goes so far as half this number. Its smell is extremely durable and diffusive; milk drawn from the breast after taking it, is found impregnated with its odour: and possibly this may be, in part, the foundation of the pectoral virtues usually ascribed to it.

It is remarkable of this oil, that it congeals, even when the air is not sensibly cold, into a butyraceous consistence: and hence, in the distillation of it, the operator ought not to be over solicitous in keeping the water in the refrigeratory too cool: it behoves him rather to let it grow somewhat hot, particularly towards the end of the process; otherwise the oil congealing, may so stop up the worm, as to endanger blowing off the head of the still, or at least a considerable quantity of oil will remain in it.

OLEUM ESSENTIALE SEMINUM CARUL.

Lond.

Essential Oil of Caraway Seeds.

The flavour of this exactly resembles that of the caraway itself. It is a very hot and pungent oil; a single drop is a moderate dose, and five or six is a very large one. It is frequently used as a carminative; and has been generally supposed to be peculiarly serviceable for promoting urine, to which it communicates some degree of its smell.

OLEUM ESSENTIALE FLO-
RUM LAVENDULÆ.

Lond. Edin.

Essential Oil of Lavender.

This oil, when in perfection, is very limpid, of a pleasant yellowish colour, extremely fragrant, possess-

ing in an eminent degree the peculiar smell generally admired in the flowers. It is a medicine of great use, both externally and internally, in paralytic and lethargic complaints, rheumatic pains, and debilities of the nervous system. The dose is from one drop to five or six.

Lavender flowers yield the most fragrant oil, and considerably the largest quantity of it, when they are ready to fall off spontaneously, and the leaves begin to shew themselves: the seeds give out extremely little. The flowers may be separated from the rest of the plant by drying it a little, and then gently beating it: they should be immediately committed to distillation, and the process conducted with a well regulated gentle heat; too great a heat would not only change the colour of the oil, but likewise make a disagreeable alteration in its smell.

OLEUM ESSENTIALE MENTHÆ PIPERITIDIS.

Lond. Edinb.

Essential oil of Peppermint.

This possesses the smell, taste, and virtues of the peppermint in perfection; the colour is a pale greenish yellow. It is a medicine of great pungency and subtilty; and diffuses, almost as soon as taken, a glowing warmth through the whole system. In colics, accompanied with great coldness, and in some hysteric complaints, it is of excellent service. A drop or two are in general a sufficient dose.

R f

OLEUM ESSENTIALE MENTHÆ SATIVÆ.

Lond. Edinb.

Essential oil of common Mint.

This oil smells and tastes strongly of the mint, but is in both respects somewhat less agreeable than the herb itself. It is an useful stomachic medicine; and not unfrequently exhibited in want of appetite, weakness of the stomach, retchings to vomit, and other like disorders, when not accompanied with heat or inflammation: two or three drops, or more, are given for a dose. It is likewise employed externally for the same purposes; and is an useful ingredient in the stomachic plaster of the shops.

OLEUM ESSENTIALE ORIGANI.

Lond.

Essential oil of Origanum.

This oil has a very pungent acrimonious taste, and a penetrating smell. It has been chiefly employed externally as an errhine and for easing pains of the teeth.

OLEUM ESSENTIALE PULEGII.

Lond.

Essential oil of Pennyroyal.

This oil, in smell and taste, resembles the original plant; the virtues of which it likewise possesses. It is given, in hysteric cases, from one to four or five drops.

OLE-

OLEUM ESSENTIALE
RORISMARINI.*London. Edinb.
Essential oil of Rosemary.*

The oil of rosemary is drawn from the plant in flower. When in perfection, it is very light and thin, pale, and almost colourless : of great fragrantcy, though not quite so agreeable as the rosemary itself. It is recommended, in the dose of a few drops, in nervous and hysterical complaints. Boerhaave holds it in great esteem against epilepsies, and suppressions of the uterine purgations occasioned by weakness and inactivity.

OLEUM ESSENTIALE
BACCARUM JUNIPERI.*London. Edinb.
Essential oil of Juniper.*

This oil is a very warm and pungent one ; of a strong flavour, not unlike that of the berries. In the dose of a drop or two, it proves a serviceable carminative and stomachic ; in one of six, eight, or more, a stimulating, detergent diuretic and emmenagogue : it seems to have somewhat of the nature of the turpentine, or their distilled oil ; like which it communicates a violet smell to the urine.

The oil of these berries refides partly in vehicles spread through the substance of the fruit, and partly in little cells contained in the seeds : when the berry is dry, and the oil hardened into a resinous substance, it becomes visible, on breaking the seeds, in form of little transparent drops. In order therefore to obtain this oil to advantage, we ought, previous to the distillation, to bruise the berry

thoroughly, so as to break the seeds, and entirely lay open the oily receptacles.

OLEUM ESSENTIALE
SASSAFRAS.*London. Edinb.
Essential oil of Sassafras.*

This is the most ponderous of all the known essential oils, but rises in distillation with sufficient ease : it appears limpid as water, has a moderately pungent taste, a very fragrant smell, exactly resembling that of the sassafras. It stands greatly commended as a sudorific, and for purifying the blood and juices : it is likewise supposed to be of service in humoral asthma and coughs. The dose is from one drop to eight or ten ; though Geoffroy goes as far as twenty.

The decoction remaining after the distillation of the oil, affords by inspissation an useful extract, of a mild bitterish subastrigent taste. Hoffman says, he has given it with great benefit, in doses of a scruple, as a corroborant in cachectic cases, in the decline of intermitting fevers, and for abating hypochondriacal spasms.

OLEUM ESSENTIALE
SABINÆ.*London. Edinb.
Essential oil of Savin.*

Savin is one of the plants which, in former editions of the Edinburgh Pharmacopœia, were directed to be slightly fermented before the distillation : this, however, is not very necessary ; for savin yields, without fermentation, and even without any such maceration, a very large quantity of oil. The oil of savin is a celebrated uterine

and emmenagogue: in cold phlegmatic habits, it is undoubtedly a medicine of great service, though not capable of performing what it has been often represented to do. The dose is, two or three drops, or more.

OLEUM ESSENTIALE PIMENTÆ.

Edinb.

Essential oil of Jamaica Pepper.

This is a very elegant oil, and may be used as a succedaneum for these of some of the dearer spices. It is of a fine pale colour; in flavour more agreeable than the oil of cloves, and not far short of that of nutmegs. It sinks in water, like the oils of some of the eastern spices.

OLEUM PETROLEI.

Lond.

Oil of fossil Tar.

Distil fossil tar, i. e. *petroleum*, in a sand heat.

THE oil obtained from this tar will be more or less thin according to the continuance of the distillation; and by its continuance the tar will at last be reduced to a black coal; and then the oil will be pretty deep in colour, though perfectly fluid. This oil has a property similar to that of the tincture of nephritic wood in water, appearing blue when looked upon, but of an orange colour when held between the eye and the light. By long keeping it loses this property. It is less disagreeable than some of the other empyreumatic oils which had formerly a place in our pharmacopœia, such as the oleum lateritium, though very acrid and stimulating.

OLEUM TEREBINTHINÆ.

Lond

Oil of Turpentine.

Take of

Common turpentine, five pounds;
Water, four pints.

Distil the turpentine with the water in a copper alembic. After the distillation of the oil, what remains is yellow resin.

OLEUM TEREBINTHINÆ RECTIFICATUM.

Lond. Edinb.

Rectified oil of Turpentine.

Take of

Oil of turpentine, one pound;

Water, four pints.

Distil. The Edinburgh pharmacopœia says, "as long as any oil comes over."

THE process here proposed for rectifying this oil, is not only tedious but accompanied with danger. For unless the luting be very close, some of the vapour will be apt to get through; and if this catch fire, it will infallibly burst the vessels. This rectified oil, which in many pharmacopœias is styled ethereal, does not considerably differ in specific gravity, smell, taste, or medical qualities, from the former.

The spirit of turpentine, as this essential oil has been styled, is frequently taken internally as a diuretic and sudorific, and it has sometimes a considerable effect when taken even to the extent of a few drops only. It has, however, been given, in much larger doses, especially when mixed with honey. Recourse has principally been had to such doses in cases of chronic rheumatism, particularly in those modifications of it which are

are styled *Sciatica* and *lumbago*. But they have not often been successful, and sometimes they have had the effect of inducing bloody urine.

OLEUM ANIMALE.

Lond.

Animal oil.

Take of

Oil of hartshorn, one pound.

Distil three times.

OLEUM E CORNUBUS
RECTIFICATUM, five
OLEUM ANIMALE.

Edinb.

Rectified oil of Horns, or animal oil.

Take of

Empyreumatic oil, newly distilled from the horns of animals, as much as you will.

Distil with a gentle heat, in a matras furnished with a head, as long as a thin colourless oil comes over, which is to be freed from the volatile alkali that it contains by means of water. That this oil may remain limpid and good, it ought to be put up in small phials completely filled and inverted, having previously put into each phial a few drops of water, that on inverting the phial the water may interpose itself between the oil and the stopper of the phial.

It is said, that the product is rendered more limpid, by mixing the oil with quick-lime into a soft paste; the lime keeping down more of the gross matter than would remain without such an addition.

This oil was first introduced by

Dippelius, whose name it has since generally borne.

Animal oil thus rectified, is thin and limpid, of a subtle, penetrating, not disagreeable smell and taste. It is strongly recommended as an anodyne and antispasmodic in doses from 15 to 30 drops. Hoffman reports, that it procures a calm and sweet sleep, which continues often for 20 hours, without being followed by any languor or debility, but rather leaving the patient more alert and cheerful than before: that it procures likewise a gentle sweat, without increasing the heat of the blood: that given to 20 drops or more, on an empty stomach, six hours before the accession of an intermittent fever, it frequently removes the disorder; and that it is likewise a very general remedy in inveterate and chronic epilepsies, and in convulsive motions, especially if given before the usual time of the attack, and preceded by proper evacuations.

The empyreumatic oils of vegetables, rectified in the same manner by repeated distillations, suffer a change similar to that which the animal oils do; losing their dark colour and offensive smell, and becoming limpid, penetrating, and agreeable: in this state they are supposed, like the animal oil, to be anodyne, antispasmodic, and diaphoretic. It is observable, that all the empyreumatic oils dissolve in spirit of wine, and that the oftener they are rectified or redistilled, they dissolve the more readily; a circumstance in which they differ remarkably from essential oils, which by repeated distillations, become more and more difficult of solution.

How far these preparations really

possess the virtues that have been ascribed to them, has not yet been sufficiently determined by experience; the rediouness and trouble of the rectification having prevented their coming into general use, or being often made. They are liable also to more material inconvenience in regard to their medicinal use, namely precariousness in their quality; for how perfectly sever they may be rectified, they gradually lose, in keeping, the qualities they had received from that process, and return more and more towards their original fetid state.

SAL ET OLEUM SUCCINI.

Lond.

Salt and Oil of Amber.

Take of

Amber, two pounds.

Distil in a sand heat, gradually augmented: an acid liquor, oil, and salt impregnated with oil, will ascend.

OLEUM ET SAL SUCCINI.

Edinb.

Oil and Salt of Amber.

Take

Equal parts of amber reduced to a powder, and of pure sand.

Mix them, and put them into a glass retort, of which the mixture may fill one half: then adapt a large receiver, and distil in a sand bath with a fire gradually increased. At first a spirit will come over, with some yellow oil: then a yellow oil, with the salt; and lastly, a reddish and black coloured oil.

When the distillation is finished, pour the liquor out of the receiver, and separate the oil from the water. Scrape off the salt

adhering to the neck of the retort and sides of the receiver, and dry it by gentle pressure between folds of blotting paper; then purify it by solution in warm water and crystallisation.

OLEUM SUCCINI RECTIFICATUM, five PURISSIMUM.

Edinb.

Distil the oil in a glass retort with six times its quantity of water, till two thirds of the water have passed into the receiver; then separate the rectified oil from the water, and keep it for use in well stopp'd phials.

OLEUM SUCCINI RECTIFICATUM.

Lond.

Rectified Oil of Amber.

Take of

Oil of amber, one pound.

Distil three times.

SAL SUCCINI PURIFICATUS.

Lond.

Purified Salt of Amber.

Take of

Salt of amber half a pound;

Distilled water, one pint.

Boil the salt in the distilled water, and set aside the solution to crystallise.

In the distillation of amber, the fire must for some time be continued gentle, scarcely exceeding the degree at which water boils, till the aqueous phlegm and thin oil have arisen; after which it is to be slowly increased. If the fire were urged hastily, the amber would swell up, and rise in its whole substance into the receiver, without

without undergoing the required decomposition or separation of its parts. When sand or similar intermedia are mixed with it, it is less subject to this accident, and the fire may be raised somewhat more expeditiously.

Our chemists generally leave the receiver unluted, that it may be occasionally removed as the salt rises and concretes in the neck of the retort; from whence it is every now and then scraped out to prevent the oil from carrying it down into the receiver. When a gross thick oil begins to arise, and no more salt appears, the distillation is stopt. though it might, perhaps, be continued longer to advantage.

Mr Pott informs us (in a curious dissertation on the salt of amber, published in the ninth volume of the Memoirs of the Academy of Sciences of Berlin), that the Prussian workmen, who prepare large quantities of this salt for exportation, from cuttings and small pieces of amber, perform the distillation without any intermedium, and in an open fire; that sweeping out the salt from the neck of the retort being found too troublesome, they suffer the oil to carry it down into the receiver, and afterwards separate it by means of bibulous paper, which imbibes the oil, and leaves the salt dry; which paper is afterwards squeezed and distilled; that they continue the distillation till all that can be forced over has arisen, taking care only to catch the last thick oil in a separate receiver; and that from this they extract a considerable quantity of salt, by shaking it in a strong vessel with three or four fresh portions of hot water, and evaporating, and crystallising the filtered waters.

The spirit of amber so called, is no more than a solution of a small portion of the salt in phlegm or water; and therefore is very properly employed for dissolving the salt in order to its crystallisation.

The salt, freed from as much of the oil as spongy paper will imbibe, retains so much as to appear of a dark brown colour. Mr Pott says, the method he has found to succeed best, and with least loss, is, to dissolve the salt in hot water, and put into the paper through which the solution is to be filtered, a little cotton slightly moistened with oil of amber: this, he says, detains a good deal of the oil of the salt, and the solution passes through the more pure. The liquor being evaporated with a very gentle fire, as that of water bath, and set to shoot, the first crystals prove transparent with a slight yellowish tinge; but those which follow are brown, oily, and bitter, and are therefore to be farther depurated in the same manner. The whole quantity of crystals amount to about one-thirtieth of the weight of the crude amber employed. By sublimation with the addition of sea-salt, as directed in former editions of the Edinburgh Pharmacopœia, the salt is thought to be more perfectly and more expeditiously purified: Mr Pott objects to sublimation, that a part of the salt is decomposed by it, a coaly matter being left behind, even though the salt was previously purified by crystallisation; it may be presumed, however, that this coal proceeds rather from the burning of some remains of the oily matter, than from the decomposition of any part of the true salt.

Pure salt of amber has a penetrating, subastrigent acid, taste. It dissolves

dissolves both in water and in rectified spirit; though not readily in either, and scarcely at all in the latter without the assistance of heat: of cold water in summer, it requires for its solution about twenty times its own weight: of boiling water, only about twice its weight. Exposed in a glass vessel, to a heat little greater than that of boiling water, it first melts, then rises in a white fume, and concretes again in the upper part of the glass into fine white flakes, leaving, unless it was perfectly pure, a little coaly matter behind. It effervesces, with alkalies both fixed and volatile, and forms with them neutral compounds, much resembling those composed of the same alkalies and vegetable acids. Mixed with acid liquors, it makes no sensible commotion. Ground with fixed alkaline salts, it does not exhale any urinous odour. By these characters, it is conceived this salt may be readily distinguished from all the other matters that have been mixed with, or vended for it. With regard to its virtue, it is accounted aperient, diuretic, and, on account of its retaining some portion of the oil, antihysteric: Boerhaave gives it the character of *diuriticum et antihystericum princeps*. Its great price, however, has prevented its coming much into use; and perhaps its real virtues are not equal to the opinion generally entertained of them.

The rectified oil has a strong bituminous smell, and a pungent acrid taste. Given in a dose of ten or twelve drops, it heats, stimulates, and promotes the fluid secretions: It is chiefly celebrated in hysterical disorders, and in deficiencies of the uterine purgations. Sometimes it is used externally, in liniments for weak or

paralytic limbs and rheumatic pains. This oil differs from all those of the vegetable kingdom, and agrees with the mineral petroleum, in not being soluble, either in its rectified or unrectified state, by spirit of wine, fixt alkaline lixivias, or volatile alkaline spirits; the oil, after long digestion or agitation, separating as freely as common oil does from water.

OLEUM VINI.

Lond.

Oil of Wine.

Take of

Alcohol,

Vitriolic acid, of each one pint. Mix them by degrees, and distil; taking care that no black foam passes into the receiver. Separate the oily part of the distilled liquor from the *volatile vitriolic acid*.—To the oily part add as much water of *pure kali* as is sufficient to correct the sulphureous smell; then distil the *ether* with a gentle heat. The oil of wine remains in the retort, swimming on the watery liquor; from which it is to be separated.

SOME caution is requisite in mixing the two liquors, that the consequent heat and ebullition (which would not only dissipate a part of the mixture, but hazard the breaking of the vessel and hurt the operator), may be avoided. The securest way is to add the vitriolic acid to the spirit of wine by a little at a time, waiting till the first addition be incorporated before another quantity be put in. By this, the ensuing heat is inconsiderable, and the mixture is effected without inconvenience.

OLEUM

OLEUM ABSINTHII DISTILLATUM.

Reff.
Essential Oil of Wormwood.

Let the fresh leaves of wormwood slightly dried be macerated with a sufficient quantity of water, and then subjected to distillation; and let the oil which comes over be separated from the water which accompanies it.

This is one of the more ungrateful oils; it smells strongly of the wormwood, and contains its particular nauseous taste, but has little or nothing of its bitterness, this remaining entire in the decoction left after the distillation: its colour, when drawn from the fresh herb, is a dark green; from the dry, a brownish yellow. This oil is recommended by Hoffman as a mild anodyne in spasmodic contractions: for this purpose, he directs a drachm of it to be dissolved in an ounce of rectified spirit of wine, and seven or eight drops of the mixture taken for a dose in any convenient vehicle. Boerhaave greatly commends in tertian fevers, a medicated liquor composed of about seven grains of this oil ground first with a drachm of sugar, then with two drachms of the salt of wormwood, and afterwards dissolved in six ounces of the distilled water of the same plant: two hours before the fit is expected, the patient is to bathe his feet and legs in warm water, and then to drink two ounces of the liquor every quarter of an hour till the two hours are expired: by this means, he says, all cases of this kind are generally cured with ease

and safety, provided there be no scirrhoty or suppuration. The oil of wormwood is employed chiefly as a vermifuge; and for this purpose is sometimes applied both externally to the belly, and taken internally; it is most conveniently exhibited in the form of pills, into which it may be reduced by mixing it with crumb of bread.

In the same manner with the oil of leum absinthii, the following oils, mentioned on the authority of the pharmacopœia Rossica, are also directed to be prepared.

OLEUM AURANTII COR- TICUM.

Reff.

Essential Oil of Orange-peel.

OLEUM CORTICUM LIMONUM.

Essence of Lemons.

Of these essential oils, as existing in a separate state in the growing vegetable, we have already offered some observations. They are obtained in a very pure state by distillation. They are now rejected from our pharmacopœias, being employed rather as perfumes than as medicines. This is particularly the case with the essence of lemons, which is a pleasant oil, of a fine smell, nearly as agreeable as that of the fresh peel; it is one of the lightest and most volatile essential oils we have, perfectly limpid, and almost colourless. It is taken in doses of two or three drops, as a cordial, in weakness of the stomach, &c. though more frequently used as a perfume. It gives a fine flavour to the official *Spiritus amomœ compositus*. When sope is given in the form of pills, the addition

dition of a few drops of this oil is thought to make it fit more easily on the stomach.

OLEUM CARYOPHYLLORUM AROMATICORUM ESSENTIALE.

Ross.
Essential Oil of Cloves.

This oil is so ponderous as to sink in water, and is not easily elevated in distillation: if the water which comes over be returned on the remaining cloves, and the distillation repeated, some more oil will generally be obtained, though much inferior in quality to the first. The oil of cloves is usually described as being "in taste excessively hot and fiery," "and of a gold yellow colour," (*Boerh. process.*) Such indeed is the composition which we receive under this name from Holland; but the genuine oil of cloves is one of the milder oils: it may be taken with great safety (duly diluted) to the quantity of ten or twelve drops or more. Nor is its colour at all yellow, unless it has been long and carelessly kept, or distilled by too violent a fire: when in perfection, it is limpid and colourless, of a pleasant, moderately warm and pungent taste, and a very agreeable smell, much resembling that of the spice itself. The Dutch oil of cloves contains a large quantity of expressed oil, as evidently appears upon examining it by distillation. This, however, cannot be the addition to which it owes its acrimony. A mean proportion of a resinous extract of cloves communicates to a large one of oil a deep colour, and a great degree of acrimony.

S 8

OLEUM CHAMEMELI FLORUM.

Ross.
Essential oil of Chamomile.

An oil of chamomile had formerly a place in our pharmacopœias, made by infusion of the recent plant and its flowers, in olive oil; and again separating it by pressure after impregnating it with the active parts of the plant by heat. This, however, was intended only for external application; but the essential oil is meant to be used internally.

It is a very pungent oil, of a strong not ungrateful smell, resembling that of the flowers: its colour is yellow, with a cast of greenish or brown. It is sometimes given in the dose of a few drops, as a carminative, in hysseric disorders, and likewise as a vermifuge: it may be conveniently made into pills with a crumb of bread.

OLEUM CINNAMOMI COR- TICIS.

Ross.
Oil of Cinnamon.

This valuable oil is extremely hot and pungent, of a most agreeable flavour, like that of the cinnamon itself. In cold languid cases, and debilities of the nervous system, it is one of the most immediate cordials and restoratives. The dose is one, two, or three drops: which must always be carefully diluted by the mediation of sugar, &c.; for so great is the pungency of this oil, that a single drop let fall upon the tongue, undiluted, produces a gangrenous eschar. In the distillation of this oil, a smart fire is required; and the low head, with

a channel round it recommended for the distillation of the less volatile oils. Is particularly necessary for this, which is one of the least volatile, and which is afforded by the spice in exceeding small quantity. The distilled water retains no small portion of the oil; but this oil being very ponderous, great part of it subsides from the water, on standing for two or three weeks in a cool place.

OLEUM SEMINUM FENICULI ESSENTIALE.

Reff.

Essential Oil of Fennel Seeds.

The oil obtained from sweet fennel seeds is much more elegant and agreeable than that of the common fennel. It is one of the mildest of these preparations: it is nearly of the same degree of warmth with that of aniseeds; to which it is likewise similar in flavour, though far more grateful. From two or three drops to ten or twelve of it are given as a carminative, in cold indispositions of the stomach; and in some kinds of coughs as an expectorant.

OLEUM DISTILLATUM MACIS.

Reff.

Essential Oil of Mace.

The essential oil of mace is moderately pungent, very volatile, and of a strong aromatic smell like that of the spice itself. It is thin and limpid, of a pale yellowish colour, with a portion of thicker and darker coloured oil at the bottom. This oil taken internally to the extent of a few drops, is celebrated in vomiting, singultus, and colic pains; and in the same complaints it has also

been advised to be applied externally to the umbilical region. It is, however, but rarely to be met with in the shops.

OLEUM MAJORANÆ ESSENTIALE.

Reff.

Essential Oil of Marjoram.

This oil is very hot and penetrating, in flavour not near so agreeable as the marjoram itself; when in perfection, it is of a pale yellow colour; by long keeping, it turns reddish: if distilled with too great a heat, it rises of this colour at first. It is supposed by some to be particularly serviceable in relaxations, obstructions, and mucous discharges of the uterus; the dose is one or two drops.

OLEUM NUCIS MOSCHATÆ ESSENTIALE.

Reff.

Essential Oil of Nutmeg.

The essential oil of nutmeg possesses the flavour and aromatic virtues of the spice in an eminent degree. It is similar in quality to the oil of mace, but somewhat less grateful.

OLEUM RUTÆ ESSENTIALE.

Reff.

Essential Oil of Rue.

The oil of rue has a very acrid taste, and a penetrating smell, resembling that of the herb, but rather more unpleasant. It is sometimes used in hysterical disorders and as an anthelmintic; and also in epilepsies proceeding from a relaxed state of the nerves.

Rue yields its oil very sparingly. The largest quantity obtained

ained from it when the flowers are ready to fall off, and the seeds begin to shew themselves; suitable maceration, previous to the distillation, is here extremely necessary.

OLEUM DISTILLATUM SATURELÆ.

Roff.
Essential Oil of Savory.

Savory yields on distillation a small quantity of essential oil, of great subtilty and volatility; and it is unquestionably an active article, but among us it is not employed in medicine.

OLEUM DISTILLATUM TANACETI.

Roff.
Essential Oil of Tansey.

Tansey yields on distillation an oil of a greenish colour inclining to yellow. It smells strongly of the herb, and possesses at least its aromatic property in a concentrated state.

OLEUM CERÆ.

Dan.
Oil of Wax.

Melt yellow bees-wax with twice its quantity of sand, and distil in a retort placed in a sand-furnace. At first an acid liquor rises, and afterwards a thick oil, which sticks in the neck of the retort, unless it be heated by applying live coals. This may be rectified into a thin oil, by distilling it several times, without addition, in a sand-heat.

BOERHAAVE directs the wax, cut in pieces, to be put into the retort first, so as to fill one half of it; when as much sand may be

poured on it as will fill the remaining half. This is a heater, and much less troublesome way, than melting the wax, and mixing it with the sand before they are put into the retort. The author above mentioned highly commends this oil against roughness and chaps of the skin, and other like purposes: the college of Strassburgh speak also of it being given internally, and say it is a powerful diuretic (*ingens diureticum*) in doses of from two to four or more drops; but its disagreeable smell has prevented its coming into use among us.

OLEUM LIGNI RHODII ESSENTIALE.

Roff.
Essential Oil of Rbodium.

This oil is extremely odorous, and principally employed as a perfume in scenting pomatums, and the like. Custom has not as yet received any preparation of this aromatic wood into internal use among us.

The number of essential oils which have now a place in the London and Edinburgh pharmacopœias, and likewise in the foreign ones of modern date, is much less considerable than formerly; and perhaps those still retained afford a sufficient variety of the more active and useful oils. Most of the oils mentioned above, particularly those which have a place in the London and Edinburgh pharmacopœias, are prepared by our chemists in Britain, and are easily procurable in a tolerable degree of perfection: But the oils from the more expensive spices, though still introduced among the preparations in the foreign pharmacopœias, are, when employed among us usually imported from abroad.

These

There are frequently so much adulterated, that it is not an easy matter to meet with such as are at all fit for use. Nor are these adulterations easily discoverable. The grosser abuses, indeed, may be readily detected: thus, if the oil be mixed with spirit of wine, it will turn milky on the addition of water: if with expressed oils, rectified spirit will dissolve the essential, and leave the other behind; if with oil of turpentine, on dipping a piece of paper in the mixture, and drying it with a gentle heat, the turpentine will be betrayed by its smell. But the more subtle artists have contrived other methods of sophistication, which elude all trials of this kind.

Some have considered the specific gravity of oils as a certain criterion of their genuineness. This, however, is not to be absolutely depended on: for the genuine oils, obtained from the same subjects, often differ in gravity as much as those drawn from different ones. Cinnamon and cloves, whose oils usually sink in water, yield, if slowly and warily distilled, an oil of great fragrancy, which is nevertheless specifically lighter than the aqueous fluid employed in the distillation of it: while, on the other hand, the last runnings of some of the lighter oils prove sometimes so ponderous as to sink in water.

As all essential oils agree in the general properties of solubility in spirit of wine, indissolubility in water, miscibility with water by the intervention of certain intermedia, volatility in the heat of boiling water, &c. it is plain that they may be variously mixed with each other, or the dearer sophisticated with the cheaper, without any possibility of discovering the

abuse by any trials. And, indeed, it would not be of much advantage to the purchaser, if he had infallible criteria of the genuineness of every individual oil. It is of as much importance that they be good, as that they be genuine; for genuine oils, from inattentive distillation and long and careless keeping, are often weaker both in smell and taste than the common sophisticated ones.

The smell and taste seem to be the only certain tests of which the nature of the thing will admit. If a bark should have in every respect the appearance of good cinnamon, and should be proved indisputably to be the genuine bark of the cinnamon tree: yet if it want the cinnamon flavour, or has it but in a low degree, we reject it; and the case is the same with the oil. It is only from use and habit, or comparisons with specimens of known quality, that we can judge of the goodness, either of the drugs themselves or of their oils.

Most of the essential oils indeed, are too hot and pungent to be tasted with safety; and the smell of the subject is so much concentrated in them, that a small variation in this respect is not easily distinguished: but we can readily dilute them to any assignable degree. A drop of the oil may be dissolved in spirit of wine, or received on a bit of sugar, and dissolved by that intermedium in water. The quantity of liquor which it thus impregnates with its flavour, or the degree of flavour which it communicates to a certain determinate quantity, will be the measure of the degree of goodness of the oil.

We shall here subjoin the result of some experiments, shewing the

quantity of essential oil obtained from different vegetables, reduced into the form of a table. The first column contains the names of the respective vegetable substances; the second, the quantity of each which was submitted to the distillation; and the third, the quantity of oil obtained. To each article is affixed the author's name from whom the experiment was taken. The different distillations of one subject, several of which are inserted in the table, shew how variable the product of oil is, and that the exotic spices, as well as our indigenous plants, do not always contain the same proportion of this active principle: though

it must be observed, also, that part of the differences may probably arise from the operation itself having been more or less carefully performed.

This table was drawn up by Doctor Lewis, and was first inserted in the first edition of his dispensatory. In consulting it the reader must observe that the weights of the substances distilled are averdupoise pounds and ounces: the weights of the oils obtained when expressed in ounces are also averdupoise ounces: but the drachms, scruples, and grains are Troy weight.

TABLE

TABLE of the Quantity of ESSENTIAL OIL obtained from different VEGETABLES.

	lb.	yield of essential oil			
Agallochum wood	10			drachms	Hoffman.
Angelica root	1			drachms	Cartbreyer.
Anifeed	1			drachms	Neuman.
Anifeed	3			ounce	Lewit.
Anifeed	4			ounce	Lewit.
Afetida	4			drachm	Neuman.
Calamus aromaticus	50			ounces	Hoffman.
Calamus aromaticus	1			scruples	Neuman.
Caraway feeds	4			ounces	Lewit.
Caraway feeds	2			drachms	Lewit.
Caraway feeds	1			ounces	Lewit.
Caroline thistle roots	1			scruples	Neuman.
Cardamon feeds	1			scruple	Neuman.
Carrot feeds	2			drachm	Lewit.
Cascarilla	1			drachm	Cartbreyer.
Chamomile flowers	1			grains	Cartbreyer.
Common chamomile flowers	6			drachms	Lewit.
Wild chamomile flowers	1			grains	Cartbreyer.
Wild chamomile flowers	6			drachms	Lewit.
Chervil leaves, fresh	9			grains	Neuman.
Cedar wood	1			drachms	Margraff.
Cinnamon	1			drachm	Sala.
Cinnamon	1			scruples	Neuman.
Cinnamon	4			drachms	Lenery.
Cinnamon	1			drachms	Cartbreyer.
Cinnamon	1			scruples	Cartbreyer.
Clary seeds	1			drachms	Lewit.
Clary in flower, fresh	4			ounces	Lewit.
Cloves	130			ounce	Teichmeyer.
Cloves	1			ounce	Cartbreyer.
Cloves	1			ounces	Cartbreyer.
Cloves	2			ounces	Hoffman.
Copaiba balsam	1			ounces	Hoffman.
Copaiba balsam	1			ounces	Lewit.
Cammin-feed	1			ounces	Lewit.
Dictamnus Creticus	1			ounces	Lewit.
Dill-feed	1			grains	Lewit.
Elecampane root	4			ounces	Lewit.
Elemi	2			scruples	Neuman.
Fennel-feed, common	1			ounce	Neuman.
Fennel feed, sweet	2			scruple	Neuman.
Galangal root	1			ounces	Lewit.
Garlic root, fresh	2			drachm	Cartbreyer.
Ginger	1			drachms	Neuman.
Horfe radish root, fresh	8			drachm	Neuman.
Hydiop leaves	2			grains	Neuman.
				drachm	Neuman.
				1 1/2	

[illegible]

[illegible]

C H A P. VII.

S A L I A.

S A L T S.

IN former parts of this work we have offered some general remarks on the nature of saline substances, *see* p. 9, 10, 16, 30, and *several parts of the Materia Medica*. Little therefore remains to be said on this subject here. For the sake of perspicuity, however, it may not be unacceptable to the reader to give a systematic arrangement of salts.

Salts are either simple or compound. The simple salts are either alkaline or acid. The compound salts are formed by the union of an acid either with an alkali, or an earth, or a metal. These compounds, occurring in nature more frequently than the alkalies and acids themselves, were, by the earlier chemists, thought to be simple bodies, as nitre, common salt, Epsum salt, vitriol, &c. When however their composition was known, the absurdity of their usual names became evident, and the necessity of forming new names was an object of great consequence to the systematic chemist. This was first attempted by Bergman. Before his time the compound salts had been promiscuously called by several chemists neutral salts, or

middle salts. He divided the compounds salts into three kinds; calling those salts which were composed of an acid and an alkali, *Neutral Salts*; those composed of an acid and an earth, *Earthy salts*; and those composed of an acid and a metal, *Metallic Salts*. The names which he gave to these compounds salts consisted of two words, a substantive and an adjective: the substantive was the alkali, earth, or metal; and the adjective was formed from the acid with which the alkali, earth, or metal, was combined: Thus, nitre, which is a compound of the vegetable alkali and nitrous acid, was called *Alkali vegetable nitratum*, in English *Nitrated vegetable alkali*; Epsum salt, which is a compound of magnesia and vitriolic acid, was called *Magnesia vitriolata*, *Vitriolated magnesia*; common vitriol, which is a combination of iron with the vitriolic acid, was called *Ferrum vitriolatum*; *vitriolated iron*: and so of the rest, the name of the compound salt conveying a knowledge of its component parts.

The first of the following tables exhibits 49 neutral and earthy salts according to this beautiful system which

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which has been universally adopted by subsequent systematic chemists: and although the original names used by Bergman have been changed by other chemists, yet the plan has remained the same; as may be seen by the second table, which contains the neutral and earthy salts mentioned in the Edinburgh pharmacopœia; and by third, which contains those of the London pharmacopœia. The first table does not contain all the possible compound salts, but only those formed by seven of the acids with the three alkalies and the four absorbent earths: The plan is so simple that any reader of common capacity may extend it at pleasure; and the reason why we have restricted it in the manner we have, is because it contains *all* the neutral

and earthy salts which are mentioned in our pharmacopœias. Bergman's original table, which he exhibited at his Lectures, contained the compound salts formed by the union of 25 acids with 3 alkalies, 4 earths, and 15 metals, amounting in all to 550 compound salts. Many of these compounds are however hitherto unknown, and some of them are even impossible; but they were put into the table to exhibit the whole plan in one view.

The table is so plain as to need little explanation: The acids are placed at the top; the alkalies and earths on the left hand; and the compound salts, resulting from their union, in the respective intersections of the different columns.

III.

Argilla.	Magnesia.	Calx.	Barytes.	volatile.	Alkali	minerale.	Alkali	vegetabile.	Alkali	vitriolicum.	Acidum
Argilla vitriolata.	Magnesia vitriolata.	Calx vitriolata.	Barytes vitriolata.	Alk. volat. vitriolatum.	Alk. miner. vitriolatum.	Alk. miner. vitriolatum.	Alk. vegetab. vitriolatum.	Alk. vegetab. vitriolatum.	Acidum nitrosum.	Acidum salis.	Acidum
Argilla nitrata.	Magnesia nitrata.	Calx nitrata.	Barytes nitrata.	Alk. volat. nitratum.	Alk. miner. nitratum.	Alk. miner. nitratum.	Alk. vegetab. nitratum.	Alk. vegetab. nitratum.	Acidum nitrosum.	Acidum salis.	Acidum
Argilla falita.	Magnesia falita.	Calx falita.	Barytes falita.	Alk. volat. falitum.	Alk. miner. falitum.	Alk. miner. falitum.	Alk. vegetab. falitum.	Alk. vegetab. falitum.	Acidum nitrosum.	Acidum salis.	Acidum
Argilla acetata.	Magnesia acetata.	Calx acetata.	Barytes acetata.	Alk. volat. acetatum.	Alk. miner. acetatum.	Alk. miner. acetatum.	Alk. vegetab. acetatum.	Alk. vegetab. acetatum.	Acidum nitrosum.	Acidum salis.	Acidum
Argilla tartarifata.	Magnesia tartarifata.	Calx tartarifata.	Barytes tartarifata.	Alk. volat. tartarifatum.	Alk. miner. tartarifatum.	Alk. miner. tartarifatum.	Alk. vegetab. tartarifatum.	Alk. vegetab. tartarifatum.	Acidum tartaricum.	Acidum tartaricum.	Acidum
Argilla boraxata.	Magnesia boraxata.	Calx boraxata.	Barytes boraxata.	Alk. volat. boraxatum.	Alk. miner. boraxatum.	Alk. miner. boraxatum.	Alk. vegetab. boraxatum.	Alk. vegetab. boraxatum.	Acidum boracicum.	Acidum boracicum.	Acidum
Argilla phosphorata.	Magnesia phosphorata.	Calx phosphorata.	Barytes phosphorata.	Alk. volat. phosphoratum.	Alk. miner. phosphoratum.	Alk. miner. phosphoratum.	Alk. vegetab. phosphoratum.	Alk. vegetab. phosphoratum.	Acidum phosphoricum.	Acidum phosphoricum.	Acidum

TABLE II. COMPOUND SALTS, according to the EDINBURGH PHARMACOPŒIA.

Acidum vitriolicum.	Lixiva vitriolata. Lixiva vitriolata sulphurea.	Soda vitriolata.	Ammonia.	Calx.	Magnesia.	Argilla.
Acidum nitrosum.	Nitrum					
Acidum muriaticum.		Sal marinus.	Sal Ammoniacus.			
Acidum aceticum.	Lixiva acetata.		Aqua ammoniac acetata.			
Acidum tartaricum.	Lixiva tartarifata. Crystalli tartari.	Soda tartarifata.				
Acidum boracicum.		Borax.				
Acidum phosphoricum.		Soda phosphorata.				
						Offa ad albidum nem cremata.

TABLE III. COMPOUND SALTS, according to the LONDON PHARMACOPŒIA.

Acidum vitriolicum.	Kali.	Kali vitriolatum.	Natrum vitriolatum.	Ammونيا.	Calx.	Magnesia.	Argilla.
Acidum nitrosum.	Nitrum.						
Acidum muriaticum.			Sali muriaticus.	Sali ammoniacus.			
Acidum aceticum.	Kali acetatum.			Aqua ammoniac acetata.			
Acidum tartareum.	Cryſtalli tartari. Kali tartariſatum.	Natron tartariſatum.					
Acidum boracicum.		Borax.					
Acidum phosphoricum.						Cornu cervi uſum.	

Having now exhibited a systematic arrangement of the salts, we proceed to describe the several saline preparations mentioned in the different Pharmacopœias.

ACIDUM VITRIOLICUM DILUTUM.

Lond.

Diluted Vitriolic Acid.

Take of

Vitriolic acid, one ounce by weight ;

Distilled water, eight ounces by weight ;

Mix them by degrees.

ACIDUM VITRIOLICUM DILUTUM. vulgo SPIRITUS VITRIOLI TENUIS.

Edin.

*Diluted vitriolic acid, commonly
called weak spirit of Vitriol.*

Take of

Vitriolic acid, one part ;

Water, seven parts.

Mix them.

In the former editions of our pharmacopœias, directions were given for the preparation of the vitriolic acid by the apothecary himself, under the heads of *Spiritus et Oleum Vitrioli, Spiritus Sulphuris per campanam*, &c : But as it is now found that all these modes are expensive, and that this acid may be furnished at a cheaper rate from the trading chemists preparing it on a large scale, both colleges have with propriety rejected it from the preparations, and introduced it only into the list of the materia medica.

When, however, it is of the degree of concentration there required, it can only be used for very few purposes in medicine. The most simple form in which it can be advantageously employed inter-

nally, is that in which it is merely diluted with water : and it is highly proper that there should be some fixed standard in which the acid in this state should be kept.

It is, however, much to be regretted, that the London and Edinburgh colleges have not adopted the same standard with respect to strength : For in the one, the strong acid constitutes an eighth, and in the other, only a ninth, of the mixture. The former proportion, which is that of the Edinburgh college, is preferable, as it gives exactly a drachm of acid to the ounce : but the dilution by means of distilled-water, which is directed by the London, is preferable to spring-water ; which, even in its purest state, is rarely free from impregnations in part affecting the acid.

The acid of vitriol is the most ponderous of all the liquids we are acquainted with, and the most powerful of the acids. If any other acid be united with a fix alkaline salt or earth, on the addition of the vitriolic, such acid will be dislodged, and arise on applying a moderate heat, leaving the vitriolic in possession of the alkali. Strong vitriolic acid mixt with water, instantly creates great heat, inasmuch that glass vessels are apt to crack from the mixture, unless it be very slowly performed : exposed to the air, it imbibes moisture, and soon acquires a remarkable increase of weight. In medicine, it is employed chiefly as subservient to other preparations : it is also frequently mixed with juleps, in such a quantity as will be sufficient to give the liquor an agreeable tartness, and it then is a cooling antiseptic, and a stomachic ; but its medical properties have already been mentioned under the article

article *Acidum Vitriolicum* in the *Materia Medica*.

ACIDUM NITROSUM.

Lond.
Nitrous acid.

Take of

Purified nitre, sixty ounces;
Vitriolic acid, by weight, twenty-nine ounces,

Mix and distil.

The specific gravity of this acid, is to that of distilled water, as 1,550 to 1,000.

ACIDUM NITROSUM, vulgo SPIRITUS NITRI.

Edin.

Nitrous acid, commonly called *spirit of nitre*.

Take of

Purest nitre, bruised, two pounds;
Vitriolic acid, one pound.

Having put the nitre into a glass retort, pour on it the acid; then distil in a sand-heat, gradually increasing the fire, till the sand-pot becomes of a dull red colour.

The specific gravity of it, to that of water, ought to be as 1550 to 1000.

HERE the vitriolic acid expels the nitrous, in red corrosive vapours, which begin to issue immediately on mixture; and which the operator ought cautiously to avoid. A pound of acid of vitriol is sufficient to expel all the acid from about two pounds of nitre, not from more: some direct equal parts of the two. The spirit, in either case, is in quality the same; the difference, in this respect, affecting only the residuum. If two parts of nitre be taken to one of vitriolic acid, the remaining alkaline basis

of the nitre is completely saturated with the vitriolic acid; and the result is a neutral salt, the same with vitriolated tartar, as we shall see hereafter. If more nitre be used, a part of the nitre, in substance, will remain blended with this neutral salt: if less nitre, it cannot afford alkali enough to saturate the vitriolic acid, and the residuum will not be a neutral salt, but a very acid one.

The nitrous acid is next in strength to the vitriolic, and lodges all others from alkaline salts or earths. It differs from all the other acids in deflagrating with inflammable matters: The chief use of this acid is as a menstruum for certain minerals, and as the basis of some particular preparations to be mentioned hereafter. It has been given likewise, diluted with any convenient vehicle, as a diuretic, in doses of from ten to fifty drops.

ACIDUM NITROSUM DILUTUM.

Lond. Edin.

Diluted nitrous acid.

Take of

Nitrous acid;

Distilled water, each equal weights.

Mix them, taking care to avoid the noxious vapours.

IN the old editions both of the London and Edinburgh pharmacopœias, directions were given for the preparation of *aquafortis simplex* and *duplex*; but these were no more than different forms of preparing an impure nitrous acid, unfit for medical purposes. They are therefore, with propriety, superseded by the more simple formulae of *acidum nitrosum*, and *acidum*.

dum nitrosum dilutum mentioned above. In making the diluted acid, distilled water is preferable to common water.

The vapour separated during the mixing of nitrous acid and water, is the permanently elastic fluid called *nitrous air*, which is deleterious to animal life.

ACIDUM MURIATICUM.

Lond.

Muriatic acid.

Take of

Dry sea-salt, ten pounds;

Vitriolic acid, by weight six pounds;

Water, by weight five pounds.

Add the vitriolic acid, first mixed by degrees with the water, to the salt; then distil.

The specific gravity of this acid is to that of distilled water, as 1,170 to 1,000.

ACIDUM MURIATICUM, vulgo SPIRITUS SALIS MARINI.

Edin.

Muriatic acid, commonly called
Spirit of sea-salt.

Take of

Sea-salt, two pounds;

Vitriolic acid,

Water, each one pound.

Let the salt be first put into a pot, and brought to a red heat, that the oily impurities may be consumed; then put it into the retort. Next mix the acid with the water, and when the mixture has cooled, pour it upon the salt. Lastly, distil in a sand bath with a middling heat, as long as any acid comes over.

The specific gravity of this acid is to that of water as 1,170 to 1,000.

This muriatic acid arises, not in

red fumes like the nitrous, but in white ones. The addition of water is more necessary here than in the foregoing process; the vapours being incondensable without some adventitious humidity. The acid of vitriol is most conveniently mixed with the water in an earthen or stone-ware vessel: for unless the mixture be made exceedingly slowly, it grows so hot as to endanger breaking a glass one.

This is the weakest of the mineral acids, but stronger than any of the vegetable: It requires a greater fire to distil it than that of nitre, yet it is more readily distilled by the action of the air. It is used chiefly as a menstruum for the making of other preparations; sometimes, likewise, it is given, properly diluted, as an antiphlogistic, aperient, and diuretic, in doses of from ten to sixty or seventy drops.

ACETUM DISTILLATUM.

Lond.

Distilled vinegar.

Take of

Vinegar five pints.

Distill with a gentle fire, in glass vessels, so long as the drops fall free from empyreuma.

Edin.

Let eight pounds of vinegar be distilled in glass vessels with a gentle heat. Let the two first pounds that come over be thrown away, as containing too much water; let the four pounds next following be reserved as the distilled vinegar. What remains is a still stronger acid, but being too much burnt is unfit for use.

This process may be performed either in a common still or in a retort.

tort. The better kinds of wine-vinegar should be used: those prepared from malt liquors, however fine and clear they may seem to be, contain a large quantity of a viscid substance, as appears from the slimyness and ropyness to which they are very much subject: this not only hinders the acid parts from rising freely, but is apt to make the vinegar boil over into the recipient, and at the same time disposes it to receive a disagreeable impression from the fire. Laded, with the best kind of vinegar, if the distillation be carried on to any great length, it is extremely difficult to avoid an erysypelma. The best method of preventing this inconvenience is, if a retort be used, to place the sand but a little way up its sides, and when somewhat more than half the liquor is come over, to pour on the remainder a quantity of fresh vinegar equal to the liquor drawn off. This may be repeated three or four times; the vinegar supplied at each time being previously heated. The addition of cold liquor would not only prolong the operation, but also endanger the breaking of the retort. If the common still be employed, it should likewise be occasionally supplied with fresh vinegar in proportion as the spirit runs off; and this continued until the products can be conveniently carried no farther: The distilled spirit must be rectified by a second distillation in a retort or glass alembic; for although the head and receiver be of glass or stone ware, the acid will contract a metallic taint from the pewter worm.

The residuum of this process is commonly thrown away as useless, although, if skilfully managed, it might be made to turn to good

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account; the most acid parts of the vinegar still remaining in it. Mixed with about three times its weight of fine dry sand, and committed to distillation in a retort, with a well-regulated fire, it yields an exceeding strong acid spirit, together with an empyreumatic oil, which taints the spirit with a disagreeable odour. This acid is nevertheless, without any rectification, better for some purposes (as a little of it will go a great way) than the pure spirit; particularly for making the sal diureticus or kali acetatum of the London college; for there the oily matter, on which its ill flavour depends, is burnt out by the calcination.

The spirit of vinegar is a purer and stronger acid than vinegar itself, with which it agrees in other respects. The medical virtues of these liquors may be seen in the *Materia Medica*, under the article *Acetum*, page 83. Their principal difference from the mineral acids consists in their being milder, less stimulating, less disposed to affect the kidneys and promote the urinary secretions, or to coagulate the animal juices. The matter left after the distillation in glass vessels, though not used internally, would doubtless prove a serviceable detergent.

ACETUM CONCENTRATUM.

Succ.

Concentrated Vinegar.

Let white wine vinegar be frozen in a wooden vessel in cold winter weather; and let the fluid separated from the ice be preserved for use. It may be considered as sufficiently strong, if one drachm of it be capable of saturating

saturation a scruple of the fixed vegetable alkali.

THIS is a very easy mode for obtaining the acid of vinegar in a concentrated state, and freed from a considerable portion of its water. But at the same time we do not thus obtain the acid so much concentrated, as by the following process.

ACIDUM ACETOSUM.

Lond.

Acetous acid.

Take of

Verdegriſ, in coarſe powder,
two pounds.

Dry it perfectly by means of a water-bath ſaturated with ſea-ſalt; then diſtil it in a ſand bath, and diſtil the liquor a ſecond time.

Its ſpecific gravity is to that of diſtilled water as 1,050 to 1,000.

By this proceſs, it may be readily concluded that we obtain the acetous-acid in its moſt concentrated ſtate, and with the leaſt admixture of water; and after the re-diſtillation, it may alſo be ſuppoſed to be free from all mixture of the copper. But the internal uſe of it has been objected to by ſome, on the ſuppoſition that it may ſtill retain a portion of the metal: and hitherto it has been but little employed.

We may however procure the acetous acid equally ſtrong, as this obtained from verdegriſ, by uſing acetated ſoda in a very dry ſtate; and the ſeparation of the acid will be promoted by the addition of ſome vitriolic acid.

ACIDUM TARTARI CRYSTALLISATUM.

Succ.

Cryſtalliſed acid of Tartar.

Take of

Prepared chalk, frequently waſhed with warm water, two pounds;

Spring water, thirty two pounds. After ſlight boiling, by degrees add of cream of tartar ſeven pounds, or as much as is ſufficient for ſaturation. Removing the veſſel from the fire, let it ſtand for half an hour, then cauſiouſly pour off the clear liquor into a glaſs veſſel. Waſh the reſiduum or tartareous ſelenites by pouring water on it three or four times. To this reſiduum afterwards add of weak vitriolic acid (conſiſting of one part of ſtrong acid, and eight of water,) fifteen pounds, let it be digeſted for a day, frequently ſtirring it with a wooden ſpatula. After this pour the acid liquor into a glaſs veſſel: But with the reſiduum mix ſixteen pounds of ſpring water: Strain it through paper, and again pour water on the reſiduum till it become inſipid. Let the acid liquors mixed together in a glaſs veſſel be boiled to the conſiſtence of a thin ſyrup; which being ſtrained, muſt be put into earthen veſſels, and evaporated in a ſand heat, till the acid concretes into ſlender cryſtals; obſerving to break, every two hours, the ſaline pellicle formed on the ſurface of the liquor, during the evaporation. The cryſtals being at length fully dried muſt be kept in a well ſtopped glaſs phial.

If before cryſtallification a little of the inſpiffated acid liquor be diluted with four times its quantity

Crystallized tartar. quantity of pure water, and a few drops of acetated lead be put into it, a white sediment will immediately be deposited. If a few drops of the diluted nitrous acid be then added, the mixture will become limpid if the tartareous liquor be pure and entirely free from the vitriolic acid; but if it be not, it will remain white. This fault, however, may be corrected, if the acid of tartar be diluted with six pounds of water, and a few ounces of the tartareous selenite be added to it. After this it may be digested, strained, and crystallised.

By this process, the acid of tartar may be obtained in a pure solid form. It would, however, be an improvement of the process, if quicklime were employed in place of chalk. For Dr Black has found that quicklime absorbs the whole of the tartareous acid, and then the supernatant liquor contains only the alkaline part of the tartar; whereas when chalk is employed, it contains a solution of soluble tartar, the chalk taking up only the superabundant acid. By this method then a greater quantity of acid might be obtained from the tartar. The tartareous acid has not hitherto been much employed in its pure state. But besides being useful for some purposes in medicine, for which the cream of tartar is at present in use, and where that supersaturated neutral may be less proper, there is also reason to suppose, that from the employment of the pure acid, we should arrive at more certainty in the preparation of the *Ammonium tartarificatum*, or tartar emetic, than by employing the cream of tartar, the proportion of

acid in which varies very much from different circumstances. The pure acid of tartar might also probably be employed with advantage for bringing other metallic substances to a saline state.

ACIDUM TARTARI DISTILLATUM.

Succ.

Distilled Acid of Tartar.

Let pounded crude tartar be put into a tubulated earthen or iron retort till it fills about two thirds of it, and let distillation be performed by gradually increasing the heat. Into the recipient, which should be very large, an acid liquor will pass over together with the oil; which being separated from the oil, must again be distilled from a glass retort.

If the residuum contained in the earthen or iron retort be diluted with water, strained through paper, and boiled to dryness, it gives what is called the alkali of tartar. If this do not appear white, it may be made so by burning, solution, straining, and evaporation.

This is another mode of obtaining both the acid and alkali of tartar in a pretty pure state, and as well as the former, it is not unworthy of being adopted into our pharmacopœias.

AQUA AERIS FIXI.

Ross.

Aerated water.

Let spring water be saturated with the fixed air, or aerial acid, arising from a solution of chalk in vitriolic acid, or in any similar acid. Water may also be impregnated

pregnated by the fixed air rising from fermenting liquors.

THE aerial acid, on which we have already had occasion to make some observations, (vide page 32), besides the great influence which it has in affecting different saline bodies into whose composition it enters, is also frequently employed in medicine, with a view to its action on the human body. There is no form under which it is at present more frequently had recourse to than that of aerated or mephitic water, as it is called; and although not yet received either into the London or Edinburgh pharmacopœias, it is daily employed in practice, and is justly intitled to a place among the saline preparations.

The most convenient mode of impregnating water with the aerial acid, and thus having it in our power to exhibit that acid as it were in a diluted state, is by means of a well known and sufficiently simple apparatus, contrived by Dr Nouth. Such a machine ought to be kept in every shop for the more ready preparation of this fluid.

Water properly impregnated with the aerial acid, has an agreeable acidulous taste. It is often employed with great advantage in the way of common drink, by those who are subject to stomach complaints, and by calculous patients. But, besides this, it furnishes an excellent vehicle for the exhibition of many other medicines.

Besides the simple aerated water, the Pharmacopœia Rossica contains also an *Aqua aeris fixi maritimi*, or ferruginous aerated water. This is prepared by suspending iron wires in simple aerated

water till the water be fully saturated with the metal.

AQUA ALKALINA AERATA.

Aerated Alkaline Water.

Let a solution of two ounces of vegetable alkali, in a gallon of water be saturated with fixed air.

THIS aerated alkaline water has been found very serviceable in calculous and gouty cases. It may be given in the quantity of half a pint, once, twice, or thrice a day; and if it offend the stomach, a teaspoonful, but not more, of spirituous cinnamon water may be added to each dose.

FLORES BENZOES.

London.

Flowers of Benzoin.

Take of

Benzoin, in powder, one pound,
Put it into an earthen pot, placed in sand; and, with a slow fire, sublimate the flowers into a paper cone fitted to the pot.

If the flowers be of a yellow colour, mix them with white clay, and sublimate them a second time.

ACIDUM BENZOINICUM, vulgo FLORES BENZOINI.

Edin.

*Benzoinic acid, commonly called
Flowers of Benzoin.*

Put any quantity of powdered benzoin into an earthen pot, to which, after fitting it with a large conical paper cap, apply a gentle heat that the flowers may sublimate. If the flowers be impregnated with oil, let them be purified

purified by solution in warm water and crystallisation.

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BENZOINE, exposed in a retort to a gentle fire, melts and sends up into the neck white, shining crystalline flowers, which are followed by an oily substance. On raising the heat a little (a recipient being applied to the neck of the retort) a thin yellowish oil comes over, intermixed with an acid liquor, and afterwards a thick, buoyant substance: this last, liquified in boiling water, gives out to it a considerable quantity of saline matter (separable by filtration and proper exhalation), which appears in all respects similar to the flowers. The whole quantity of flowers which benzoine is capable of yielding, cannot therefore be obtained by the above processes. The gratest part of the flowers arise with a less degree of heat than what is necessary to elevate the oil; but if the operation be hastily conducted, or if the fire be not exceedingly gentle, the oil will arise along with the flowers, and render them foul. Hence in the way of trade, it is extremely difficult to prepare them of the requisite whiteness and purity; the heat which becomes necessary, when large quantities of the benzoine are employed, being so great as to force over some of the oil along with them.

Besides being insufficient for obtaining the flowers in perfection, these operations are expensive, requiring a large apparatus and much attendance. Hence the following process is preferable.

SAL BENZOES.

Succ.

Salt of Benzoine.

Take of

Benzoine in fine powder,
Quicklime powdered, each half a pound;

Water, four pounds.

Boil them gently for a quarter of an hour, and filter the liquor while warm through paper. Add to the residuum four pounds more of water, boil and filter this liquor as the former. Mix these and boil them in a tin vessel down to two pounds. When cold pour it into a glass vessel, and drop into it some muriatic acid as long as any precipitate is formed. After standing a while pour off the clear liquor, wash the precipitate with cold water, and dry it on filtering paper.

THIS easy and cheap way of obtaining the flowers of benzoine is the invention of Mr Scheele: The salt produced by it is not, like that produced by sublimation, in a crystalline form; but it may easily be reduced to that form by dissolving it in about four ounces of water with gently boiling, straining the liquor while hot into a glass vessel previously heated, and setting it by to crystallise; when the crystals are formed pour off the solution from above them, and by repeated gentle evaporations and crystallisations separate all the salt. As flowers of benzoine however are, on account of their lightness, not easily pulverised, it may be best to keep them in the form of a precipitate, which is the finest powder. To this consideration may be added, that a portion of the salt must consequently

quently be lost by the repeated crystallisations.

These flowers when made in perfection, have an agreeable taste and fragrant smell. They totally dissolve in spirit of wine; and likewise, by the assistance of heat, in water. By the mediation of sugar they remain suspended in cold water, and thus form an elegant balsamic syrup. Some have held them in great esteem as pectoral and sudorific, in the dose of half a scruple or more: but at present they are rarely used, on account of the offensive oil with which, as usually prepared, they are tainted.

They enter the composition of the pargoric elixir, or *tinctura opii camphorata*, as it is now called.

LIXIVA E TARTARO, vulgo SAL TARTARI.

Edimb.

Lixive of tartar, commonly called
Salt of tartar.

Take of

Tartar, what quantity you please.

Roll it up in a piece of moist bibulous paper, or put it into a crucible, and burn it to a coal, next, having beat this coal, calcine it in an open crucible with a moderate heat, taking care that it do not melt, and continue the calcination till the coal becomes of a white, or at least of an ash colour. Then dissolve it in warm water: strain the liquor through a cloth, and evaporate it in a clean iron vessel; diligently stirring it towards the end of the process with an iron spatula, to prevent it from sticking to the bottom of the vessel. A very white salt will remain, which is to be left a little longer on the fire, till the bottom of the vessel becomes

almost red. Lastly, when the salt is grown cold, let it be put up in glass vessels well stoppt.

NATIVE tartar is a saline substance compounded of an acid, of a fixed alkali, and of oily, viscid, and colouring matter. The purpose of the above process is, to free it from every other matter but the fixed alkali. From the mistaken notion, that tartar was essentially an acid mixed only with impurities, it has been generally supposed that the effect of this operation was the conversion of an acid into an alkali by means of heat. But since Mr Scheele has discovered that the proper matter of tartar, freed from the oily and colouring parts, is really a salt compound of an acid and fix vegetable alkali, we have no farther need of such an obscure theory. The acid of the tartar by this process is dissipated by means of the heat; and the oily, viscid, and colouring matters, are partly dissipated, and partly brought to the state of insoluble earthy matter, easily separable by the future lixiviation from the alkali. But by the last of these processes, something farther is carried on than the separation of the more palpable foreign matters. By allowing the salt, freed from the water of the lixivium, to remain on the fire till the bottom of the vessel becomes almost red, an oily matter that may still be present seems to be decomposed by the action of the heat. Besides the complete discharge of the above principles, the remaining fixed alkali also suffers a considerable loss of its fixed air, or aerial acid: on this account it is somewhat caustic, considerably deliquescent, and in proportion to its possessing these

properties more or less, it more or less nearly approaches to the state of pure alkali. It is not, however, so effectually deprived of fixed air as to be sufficiently caustic, for a number of purposes. Where causticity is not required, the salt thus purified is abundantly fit for most pharmaceutical purposes, but as native tartar generally contains small portions of neutral salts besides the foreign matters already noticed, it is necessary if we wish to have a very pure alkali for nice operations, to employ crystallisation, and other means beside the process here directed.

The white and red sorts of tartar are equally fit for the purpose of making fixt alkaline salt; the only difference is, that the white affords a somewhat larger quantity than the other; from sixteen ounces of this sort, upwards of four ounces of fixt alkaline salt may be obtained. The use of the paper is to prevent the smaller pieces of the tartar from dropping down into the ash hole, through the interstices of the coals, upon first injecting it into the furnace.

The calcination of the salt (if the tartar was sufficiently burnt at first) does not increase its strength so much as is supposed: nor is the greenish or blue colour any certain mark either of its strength, or of its having been, as was formerly supposed, long exposed to a vehement fire: for if the crucible be perfectly clean, close covered, and has stood the fire without cracking, the salt will turn out white, though kept melted and reverberating ever so long; while, on the other hand, a slight crack happening in the crucible, or a spark of a coal falling in, will in a few minutes give the salt the colour admired. The

colour in reality, is a mark rather of its containing some inflammable matter, than of its strength.

The vegetable alkali prepared from tartar has now no place in the London Pharmacopœia, or at least it is included under the following article.

KALI PRÆPARATUM.

Lond.

Prepared Kali.

Take of

Pot-ash, two pounds;

Boiling distilled water, three pints.

Dissolve and filtre through paper: evaporate the liquor till a pellicle appears on the surface; then set it aside for 12 hours that the neutral salts may crystallize: after which pour out the liquor, and boil away the whole of the water, constantly stirring, lest any salt should adhere to the pot.

In like manner is purified impure kali from the ashes of any kind of vegetable.

The same salt may be prepared from tartar burnt till it becomes of an ash colour.

LIXIVA PURIFICATA, vulgo
SAL ALKALINUS FIXUS
VEGETABILIS PURIFICATUS.

Edinb.

Purified lixivor, commonly called purified fixed vegetable alkaline salt.

Let the fixed alkaline salt, called in English, *pearl-ashes*, be put into a crucible, and brought to a somewhat red heat, that the oily impurities, if there be any, may be consumed: then having powdered it, agitate it with an equal weight of water that they may be well mixed. After the feces have

have subsided, pour the ley into a very clean iron pot, and boil to dryness, stirring the salt towards the end of the process, to prevent its sticking to the vessel.

If this salt has been rightly purified, though it be very dry it may be dissolved into a liquor void of colour or smell, by rubbing it with an equal weight of water.

THE potash used in commerce is an alkali mixed with a considerable quantity of remaining charcoal, sulphur, vitriolated tartar and oily matter. In large manufactures, the alkaline part is indeed considerably freed from impurities by mixing the ashes with water, evaporating the clear ley, and burning the residuum in an oven; but this process, besides being insufficient for the complete separation of the impurities, superadds a quantity of stony matter, giving to the alkali the *pearl* appearance (whence its name), and rendering it altogether unfit for pharmaceutical purposes. By the processes here directed, the alkali is effectually freed from all these heterogeneous matters, excepting perhaps a small proportion of vitriolated tartar, or other neutral salts, which may very generally be neglected.

The purified vegetable alkali, has been known in our pharmacopœias under the different names of *Sal abstinibii*, *sal tartari*, &c. But all these being really the same, the terms as leading to confusion and error, have been with justice expunged; and it has been a desideratum to discover some short name equally applicable to the whole. This is at length accomplished by Dr Black who adopts the substantive *Lixivæ*, which is most probably the root of the adjective

Lixivius used by Pliny. To the name *Kali* employed by the London college there are several objections. Besides the inconvenience which arises, from its being an indeclinable word, the fossil alkali is equally entitled to the same appellation; and as a considerable portion of the fossil alkali is prepared from burning a vegetable growing on the sea coasts, which has the name of *kali* (the *Kali spinosum* of Linné) some apparent contradiction and ambiguity may thence arise.

The purified vegetable alkali is frequently employed in medicine, in conjunction with other articles: particularly for the formation of saline neutral draughts and mixtures: But it is used also by itself in doses of from three or four grains to fifteen or twenty; and it frequently operates as a powerful diuretic, particularly when aided by proper dilution and a warm regimen.

AQUA KALIPRÆPARATI.

Lond.

Water of prepared Kali.

Take of

Prepared kali, one pound.

Set it by in a moist place till it be dissolved, and then strain it.

THIS article had a place in former editions of our pharmacopœias under the titles of *lixivium tartari*, *liquamen salis tartari*, *elcum tartari per deliquium*, &c. It is however, to be considered as a mere watery solution of the mild vegetable alkali formed by its attracting moisture from the air; and therefore it is with propriety styled *Aqua*.

The solutions of fixt alkaline salts, made by exposing them to

a moist air, are generally considered as being purer than those made by applying water directly : for though the salt be repeatedly dissolved in water, filtered, and exsiccated ; yet on being liquefied by the humidity of the air, it will still deposit a portion of earthy matter : but it must be observed, that the exsiccated salt leaves always an earthy matter on being dissolved in water, as well as on being deliquated in the air. Whether it leaves more in the one way than in the other, is not determined with precision. The deliquated lixivium is said to contain nearly one part of alkaline salt to three of an aqueous fluid. It is indifferent, with regard to the lixivium itself, whether the white ashes of tartar, or the salt extracted from them, be used ; but as the ashes leave a much greater quantity of earth, the separation of the ley proves more troublesome.

The aqua kali of the present edition of the London pharmacopœia, then, may be considered as an improvement of the lixivium tartari of their former edition. But the Edinburgh college considering this solution as being in no respect different from that made by pure water, have rejected this preparation from their pharmacopœia.

AQUA KALI PURI.

Lond.

Water of pure kali.

Take of

Prepared kali, four pounds ;

Quick lime, six pounds ;

Distilled water, four gallons.

Put four pints of water to the lime, and let them stand together for an hour ; after which, add the

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kali and the rest of the water ; then boil for a quarter of an hour ; suffer the liquor to cool, and strain it. A pint of this liquor ought to weigh sixteen ounces. If the liquor effervesces with any acid, add more lime, and boil the liquor for five minutes, after which strain it.

A preparation similar to this had a place in the former edition of the London Pharmacopœia, under the title of *lixivium saponarium*. Quicklime, by depriving the mild alkali of its aerial acid, renders it caustic : hence this ley is much more acrimonious, and acts more powerfully as a menstruum of oils, fats, &c. than a solution of the mild fixed alkali does. The lime should be used fresh from the kiln ; by long keeping even in close vessels, it loses its strength : such should be chosen as is thoroughly burnt or calcined, which may be known by its comparative lightness.

All the instruments employed in this process, should be either of wood, earthen ware, or glass : the common metallic ones would be corroded by the ley, so as either to discolour it or communicate disagreeable qualities to it. If it should be needful to filtre or strain the liquor, care must be taken that the filtre or strainer be of vegetable matter : woollen, silk, and that sort of filtering paper which is made of animal substances, are quickly corroded and dissolved by it.

The liquor is most conveniently weighed in a narrow-necked glass bottle, of such a size, that the measure of a wine pint may arise some height into its neck ; the place to which it reaches being marked

x

marked with a diamond. A pint of the common leys of our soap-makers weighs more than sixteen ounces: it has been found that their soap-ley will be reduced to the standard here proposed, by mixing it with something less than an equal measure of water.

AQUA LIXIVIA CAUSTICA, vulgo LIXIVIVUM CAUSTICUM.

Edinb.

Caustic ley.

Take of

Fresh burnt quicklime, eight ounces;

Purified Lixive, six ounces.

Throw the quicklime into an iron or earthen vessel, with twenty eight ounces of warm water. The ebullition and extinction of the lime being perfectly finished, instantly add the alkaline salt; and having thoroughly mixed them, cover the vessel till it be cool. Stir the cooled matter, and pour out the whole into a glass funnel, whose throat must be stopp'd up with a piece of clean rag. Let the upper mouth of the funnel be covered, while the tube of it is inserted into a glass vessel, so that the ley may gradually drop through the rag into that vessel. When it first gives over dropping, pour into the funnel some ounces of water; but cautiously, so that the water may swim above the matter. The ley will again begin to drop, and the affusion of water is to be repeated in the same manner, until three pounds have dropped, which takes up the space of two or three days; then agitating the superior and

inferior parts of the ley together, mix them, and put them up in a well stopp'd phial.

If the ley be rightly prepared, it will be void of colour or smell; nor will it raise an effervescence with acids, except, perhaps, a very slight one. Colour and odour denote the salt not sufficiently calcined; and effervescence, that the quicklime has not been good.

THE reasons and propriety of the different steps in the above process will be best understood by studying the theory on which it is founded. The principle of mildness in all alkaline salts, whether fixt or volatile, vegetable or fossil, is fixed air, or the aerial acid: But as quicklime has a greater attraction for fixed air than any of these salts, so if this substance be presented to any of them, they are deprived of their fixed air, and become caustic. This is what happens in the above processes. The propriety of closely shutting the vessels through almost every step of the operation, is sufficiently obvious; viz. to prevent the absorption of fixed air from the atmosphere, which might defeat our intentions. When only a piece of cloth is put into the throat of the funnel, the operation is much more tedious, because the pores of the cloth are soon blocked up with the wet powdery matter. To prevent this, it may be convenient to place below the cloth a piece of fine wire-work; but as metallic matters are apt to be corroded, the method used by Dr Black is the most eligible. The Doctor first drops a rugged stone into the tube of the funnel, in a certain place of which it forms itself a firm bed, while

while the inequalities on its surface afford interstices of sufficient size for the passage of the filtering liquor. On the upper surface of this stone he puts a thin layer of lint or clean tow; immediately above this, but not in contact with it, he drops a stone similar to the former, and of a size proportioned to the swell in the upper part of the tube of the funnel. The interstices between this second stone and the funnel are filled up with stones of a less dimension, and the gradation uniformly continued till pretty small sand is employed. Finally, this is covered with a layer of coarser sand and small stones to sustain the weight of the matter, and to prevent its being invicinated in the minute interstices of the fine sand. The throat of the funnel being thus built up, the stony fabric is to be freed of clay and other adhering impurities, by making clean water pass through it till the water comes clear and transparent from the extremity of the funnel. It is obvious, that in this contrivance the author has, as usual, copied nature in the means she employs to deplete watery matters in the bowels of the earth; and it might be usefully applied for the filtration of various other fluids.

It is a very necessary caution to pour the water gently into the funnel; for if it be thrown in a forcible stream, a quantity of the powdery matter will be washed down, and render all our previous labour useless. That part of the ley holding the greatest quantity of salt in solution, will no doubt be the heaviest, and will consequently sink lowest in the vessel: the agitation of the ley is therefore

necessary, in order to procure a solution of uniform strength through all its parts. If the salt has been previously freed of oily and other inflammable matters, this ley will be colourless and void of smell. If the quicklime has been so effectually deprived of its own fixed air, as to be able to absorb the whole of that in the alkali, the ley will make no effervescence with acids, being now deprived of its fixed air.

It may be proper to observe, for the sake of understanding the whole of the theory of the above process, that while the alkali has become caustic, the lime has in its turn become mild and insoluble in water, from having received the fixed air of the alkali.

The caustic ley, under various pompous names, has been much used as a lithontriptic; but its fame is now beginning to decline. In acidities in the stomach, attended with much flatulence and laxity, the caustic ley is better adapted than mild alkalies; as in its union with the acid matter it does not separate air. When covered with mucilaginous matters, it may be safely taken into the stomach: and by stimulating, it coincides with the other intentions of cure. It has been employed with advantage in dyspeptic cases.

KALI PURUM.

Land.

Pure kali.

Take of

Water of pure kali, one gallon.

Evaporate it to dryness; after which let the salt melt on the fire and pour it out.

CAUTION.

CAUSTICUM COMMUNE
ACERRIMUM.*Edin.**The strongest common Caustic.*

Take of

Caustic ley, what quantity you please.

Evaporate it in a very clean iron vessel on a gentle fire, till, on the ebullition ceasing, the saline matter gently flows like oil, which happens before the vessel becomes red. Pour out the caustic, thus liquefied, on a smooth iron plate; let it be divided into small pieces before it hardens, which are to be kept in a well-stopt phial.

THESE preparations may be considered as differing in no essential particular. But the directions given by the Edinburgh college are the most precise and distinct.

The effect of the above processes is simply to discharge the water of the solution, whereby the causticity of the alkali is more concentrated in any given quantity. These preparations are strong and sudden caustics. The caustic prepared in this way has an inconvenience of being apt to liquefy too much on the part to which it is applied, so that it is not easily confined within the limits in which it is intended to operate; and indeed the suddenness of its action depends on this disposition to liquefy.

CALX CUM KALI PURO.

*Lond.**Lime with pure Kali.*

Take of

Quick-lime, five pounds and four ounces;

Take of

Barilla, powdered, two pounds;
Distilled water, one gallon.

Boil

Water of pure kali, sixteen pounds by weight.

Boil away the water of pure kali to a fourth part; then sprinkle in the lime, reduced to powder by the affusion of water. Keep it in a vessel close stopp'd.

CAUSTICUM COMMUNE
MITIUS.*Edinb.**The milder common caustic.*

Take of

Caustic ley, what quantity you please.

Evaporate it in an iron vessel till one-third remains; then mix with it as much new-flaked quicklime as will bring it to the consistence of pretty solid pap, which is to be kept in a vessel closely stop'd.

THESE preparations do not essentially differ from each other, while the chief difference between the present formula and that which stood in the last edition of the London pharmacopœia is in the name. It was then styled the *causticum commune acerrimum*.

Here the addition of lime in substance renders the preparation less apt to liquefy than the foregoing, and consequently it is more easily confinable within the intended limits, but proportionally slower in its operation.

Exposed long to the air, the preparations gradually resume their power of effervescence, and proportionally lose their activity.

NATRON PRÆPARATUM.

*Lond.**Prepared Natron.*

Take of

Quick-lime, five pounds and four ounces;

Take of

Barilla, powdered, two pounds;
Distilled water, one gallon.

Boil

Boil the barilla in four pints of water for half an hour, and strain. Boil the residuum with the rest of the water, and strain. Evaporate the mixed liquors to two pints, and set them by for eight days; strain this liquor again; and, after due boiling, set it aside to crystallise. Dissolve the crystals in distilled water; strain the solution, boil, and set it aside to crystallise.

THE name of *natron*, here used by the London college for the fixed fossil alkali, has, as well as their name for the vegetable alkali, been objected to. This article differs in name only from the following.

**SODA PURIFICATA, vulgo
SAL ALKALINUS FIXUS
FOSSILIS PURIFICATUS.**

Edinb.

*Purified Soda, commonly called
purified fixed Fossil Alkaline Salt.*

Take of

Ashes of Spanish kali, or barilla,
as much as you please.

Bruse them; then boil in water till all the salt be dissolved. Strain this through paper, and evaporate it in an iron vessel, so that after the liquor has cooled the salt may concrete into crystals.

By the above processes, the fossil alkali is obtained sufficiently pure, being much more disposed to crystallise than the vegetable alkali.

It is with great propriety, that in this, as well as many other processes, the London college direct the use of distilled water, as being free from every impregnation.

The natron, or fossil alkali, is found native in some parts of

Africa, and seems to have been better known to the antients than to late naturalists; and it is, with good reason, supposed to be the nitre of the Bible. How far the native natron may supersede artificial means to procure it from mixed bodies, we have not been able to learn with certainty.

The fossil alkali is not only a constituent of different neutrals, but is also sometimes employed as a medicine by itself. And in its purified state it has been by some reckoned useful in affections of the scrophulous kind.

AMMONIA PRÆPARATA.

Lond.

Prepared Ammonia.

Take of

Sal ammoniac, powdered, one pound;

Prepared chalk, two pounds.

Mix and sublime.

**AMMONIA PRÆPARATA,
vulgo SAL AMMONIACUS
VOLATILIS.**

Edinb.

*Prepared ammonia, commonly called
Volatile sal Ammoniac.*

Take of

Sal ammoniac, one pound:

Chalk, very pure and dry, two pounds;

Mix them well, and sublime from a retort into a refrigerated receiver.

AQUA AMMONIÆ.

Lond.

Water of Ammonia.

Take of

Sal ammoniac, one pound;

Pot-ash, one pound and a half;

Water, four pints.

Draw

Draw off two pints by distillation, with a slow fire.

AQUA AMMONIÆ, vulgo
SPIRITUS SALIS AMMONIACI.

Eduib.

Water of Ammonia, commonly called
Spirit of Sal Ammoniac.

Take of

Sal ammoniac,

Purified lixivæ, of each sixteen
ounces;

Water, two pounds.

Having mixed the salts, and put them into a glass retort, pour in the water; then distil to dryness with a sand bath, gradually raising the heat.

SAL ammoniac is a neutral salt, composed of volatile alkali and muriatic acid. In these processes the acid is absorbed by the fixt alkali or chalk; and the volatile alkali is of course set at liberty.

The volatile alkali is, however, in its mild state, being combined with the fixed air, discharged from the fixed alkali or chalk, on their uniting with the muriatic acid.

The fixt alkali begins to act on the sal ammoniac, and extricates a pungent urinous odour as soon as they are mixed. Hence it is most convenient not to mix them till put into the retort: the two salts may be dissolved separately in water, the solutions poured into a retort, and a receiver immediately fitted on. An equal weight of the fixt alkaline salt is fully, perhaps more than sufficient, to extricate all the volatile alkali.

Chalk does not begin to act on the sal ammoniac till a considerable heat be applied. Hence they may be without inconvenience, and in-

deed ought to be, thoroughly mixed together before they are put into the retort. The surface of the mixture may be covered with a little more powdered chalk, to prevent such particles of the sal ammoniac as may happen to lie upon the surface from subliming unchanged. Though the fire must here be much greater than when fixt alkaline salt is used, it must not be strong, nor suddenly raised; for if it be, a part of the chalk (though of itself not capable of being elevated by any degree of heat) will be carried up along with the volatile salt. M. du Hamel experienced the justness of this observation: He relates, in the Memoirs of the French Academy of Sciences for the year 1735, that he frequently found his volatile salt, when a very strong fire was used in the sublimation, amount to more, sometimes one half more, than the weight of the crude sal ammoniac employed: and, although not three fourths of this concrete are pure volatile salt, yet the fixt earthy matter, when once volatilized by the alkali, arose along with it again on the gentlest resublimation, dissolved with it in water, and exhaled with it in the air. When all the salt has sublimed, and the receiver grown cool, it may be taken off, and luted to another retort charged with fresh materials. This process may be repeated till the recipient appears lined with volatile salt to a considerable thickness; the vessel must then be broken, in order to get out the salt.

These preparations of volatile alkali procured from Sal ammoniac are somewhat more acrimonious than those produced directly from animal substances, which always contain a portion of the oil of the subject, and receive from thence some

some degree of asaponaceous quality. The last may be reduced to the same degree of purity, by combining them with acids into ammoniacal salts; and afterwards recovering the volatile alkali from these compounds by the processes above directed.

The matter which remains in the retort after the distillation or sublimation of the volatile alkali is found to consist of muriatic acid united with the fixt alkali or chalk employed. When vegetable fixt alkali has been used, the residuum, or *caput mortuum* as it is called, yields, on solution and crystallisation, a muriated pot-ash to which extraordinary virtues were formerly attributed. It was called by the names of *sal antihystericum*, *antihypochondriacum*, *febrifugum*, *digestivum Sydenh.*, &c.

The *caput mortuum* of the volatile salt, where chalk is employed, exposed to a moist air, runs into a pungent liquor precisely the same with a solution of chalk made directly in the muriatic acid; it is called by some *oleum cretæ*, oil of chalk. It ought to be preserved, as it is the best substance for the rectification of alkohol. For the manner of using it in that process see ALKOHOL.

AQUA AMMONIÆ PURÆ.

Lond.

Water of pure Ammonia.

Take of

Sal ammoniac, one pound;

Quicklime, two pounds;

Water, one gallon.

Add to the lime two pints of the water. Let them stand together an hour; then add the sal ammoniac and the other fixt pints of water boiling, and immediately cover the vessel. Pour out

the liquor when cold, and distil off with a slow fire one pint.

AQUA AMMONIÆ CAUSTICÆ, vulgo SPIRITUS SALIS AMMONIACI CUM CALCE VIVA.

Edinb.

Water of caustic ammonia, commonly called spirit of sal ammoniac with quicklime.

Take of

Quicklime, fresh burnt, two pounds:

Water, one pound.

Having put the water into an iron or stone-ware vessel, add the quicklime, previously beat; cover the vessel for twenty-four hours: when the lime has fallen into a fine powder, put it into the retort. Then add sixteen ounces of sal ammoniac, dissolved in five pounds of water; and, shutting the mouth of the retort, mix them together by agitation. Lastly, distil into a refrigerated receiver with a very gentle heat, (so that the operator's hand can easily bear the heat of the retort) till twenty ounces of liquor are drawn off. In this distillation the vessels are to be so luted as to effectually restrain the vapours, which are very penetrating.

THE theory of these processes is precisely the same with that of the preparation of *lixivium causticum*. The effect of the quicklime on the sal ammoniac, is very different from that of the chalk. The quicklime detaching the volatile alkali pure, while the chalk during its union with the acid gives out fixt air, which combines with the volatile alkali and renders it mild.

Immediately

Immediately on mixture, a very penetrating vapour exhales; and in distillation the whole of the volatile salt arises in a liquid form; no part of it appearing in a concrete state, how gently soever the liquor be distilled. This spirit is far more pungent than the other, both in smell and taste; and, like caustic fixt alkalies raises no effervescence with acids.

This spirit is held to be too acrimonious for internal use, and has therefore been chiefly employed for smelling to in faintings, &c. though when properly diluted, it may be given inwardly with safety. It is a powerful menstruum for some vegetable substances, as Peruvian bark, from which the other spirits extract little. It is also most convenient for the purpose of rendering oils miscible with water; as in the preparation of what is called in extemporaneous practice *the oily mixture*.

Some have mixed a quantity of this with the officinal spirits both of sal ammoniac and of hartshorn; which thus become more pungent, so as to bear an addition of a considerable quantity of water, without any danger of the discovery from the taste or smell. This abuse would be prevented, if what has been formerly laid down as a mark of the strength of these spirits (some of the volatile salt remaining undissolved in them) were attended to. It may be detected by adding to a little of the suspected spirit about one-fourth its quantity or more of rectified spirit of wine: which, if the volatile spirit be genuine, will precipitate a part of its volatile salt, but occasions no visible separation or change in the caustic spirit, or in those which are sophisticated with it.

Others have substituted for the

spirit of sal ammoniac a solution of crude sal ammoniac and fixt alkaline salt mixed together. This mixture deposits a saline matter on the addition of spirit of wine, like the genuine spirit; from which, however, it may be distinguished by the salt which is thus separated not being a volatile alkali, but a fixt neutral salt. The abuse may be more readily detected by a drop or two of solution of silver, in aquafortis, which will produce no change in the appearance of the true spirit, but will render the counterfeit turbid and milky.

LIQUOR VOLATILIS, SAL, ET OLEUM CORNU CER.

VI.

Lond.

*The volatile Liquor, Salt, and Oil, of
Hartshorn.*

Take of

Hartshorn, ten pounds.

Distil with a fire gradually increased. A volatile liquor, salt, and oil will ascend.

The oil and salt being separated, distil the liquor three times.

To the salt add an equal weight of prepared chalk, and sublime thrice, or till it become white.

The same volatile liquor, salt, and oil, may be obtained from any parts (except the fat) of all kinds of animals.

THE volatile alkali obtained from hartshorn, whether in a solid or fluid state, is precisely the same with that obtained from sal ammoniac; and as that process is the easiest, the Edinburgh college have entirely rejected the present. Volatile alkali however, is prepared from bones and other animal substances by several very extensive

tractors,

traders. These wholesale dealers have very large pots for this distillation with earthen heads, almost like those of the common still; for receivers, they use a couple of oil jars, the mouths of which are luted together; the pipe that comes from the head enters the uppermost jar through a hole made on purpose in its bottom. When a large quantity of the subject is to be distilled, it is customary to continue the operation for several days successively; only unluting the head occasionally to put in fresh materials.

When only a small quantity of spirit or salt is wanted, a common iron pot, such as is usually fixed in sand furnaces, may be employed; an iron head being fitted to it. The receiver ought to be large, and a glass, or rather tin, adopter inserted between it and the pipe of the head.

The distilling vessel being charged with pieces of the horn, a moderate fire is applied, which is slowly increased, and raised at length almost to the utmost degree. At first a watery liquor arises; the quantity of which will be smaller or greater according as the horns were more or less dry: this is succeeded by the salt and oil; the salt at first dissolves as it comes over in the phlegm, and thus forms what is called *spirit*. When the phlegm is saturated, the remainder of the salt concretes in a solid form to the sides of the recipient. If it be required to have the whole of the salt solid and undissolved, the phlegm should be removed as soon as the salt begins to arise, which may be known by appearance of white fumes; and that this may be done the more commodiously, the receiver should be left unluted, till this first part

of the process be finished. The white vapours which now arise, sometimes come with such vehemence, as to throw off or burst the receiver; to prevent this accident, it is convenient to have a small hole in the luting; which may be occasionally stoppt with a wooden peg, or opened as the operator shall find proper. After the salt has all arisen, a thick dark coloured oil comes over: the process is now to be discontinued: and the vessels, when grown cold, unluted.

All the liquid matters being poured out of the receiver, the salt which remains adhering to its sides it to be washed out with a little water, and added to the rest. It is convenient to let the whole stand for a few hours, that the oil may the better disengage itself from the liquor, so as to be first separated by a funnel, and afterwards more perfectly by filtration through wet paper. The salt and spirits are then to be farther purified as above directed.

The spirit of hartshorn met with in the shops is extremely precarious in point of strength; the quantity of salt contained in it (on which its efficacy depends) varying according as the distillation in rectifying it is continued for a longer or shorter time. If after the volatile salt has arisen, so much of the phlegm or watery part be driven over as is just sufficient to dissolve it, the spirit will be fully saturated, and as strong as it can be made. If the process be not at this instant stopped, the phlegm, continuing to arise, must render the spirit continually weaker and weaker. The distillation therefore ought to be discontinued at this period: or rather while some of the salt still remains undissolved; the

the spirit will thus prove always equal, and the buyer be furnished with a certain criterion of its strength.

VOLATILE alkaline salts, and their solutions called *spirits*, agree in many respects, with fixt alkalies, and their solutions or leys: as in changing the colour of blue flowers to a green: effervescing, when in their mild state, with, and neutralising acids; liquefying the animal juices; and corroding the fleshy parts, so as, when applied to the skin, and prevented from exhaling by a proper covering, to act as caustics; dissolving oils and sulphur, though less readily than fixed alkalies, on account, probably, of their not being able to bear any considerable heat, by which their activity might be promoted. Their principal difference from the other alkalies seems to consist in their volatility: they exhale or emit pungent vapours in the coldest state of the atmosphere; and by their stimulating smell they prove serviceable in languors and faintings. Taken internally, they discover a greater colliquating as well as stimulating power; the blood drawn from a vein, after their use has been continued for some time, is said to be remarkably more fluid than before; they are likewise more disposed to operate by perspiration, and to act on the nervous system. They are particularly useful in lethargic cases; in hysterical and hypochondriacal disorders, and in the languors, headachs, inflations of the stomach, flatulent colics, and other symptoms which attend them; they are generally found more serviceable to aged persons, and in phlegmatic habits, than in the opposite circumstances. In some fevers, particularly those of

the low kind, accompanied with a cough, hoarseness, and a redundancy of phlegm, they are of great utility; raising the vis vitæ, and exciting a salutary diaphoresis:

In vernal intermittents, particularly those of the slow kind, they are often the most efficacious remedy. Dr Biset observes, in his essay on the medical Constitution of Great Britain, that though many cases occur which will yield to no other medicine than the bark, yet he has met with many which were only suppressed from time to time by the bark, but were completely cured by alkaline spirits: He tells us, that these spirits will often carry off vernal intermittents, without any previous evacuation: but that they are generally more effectual, if a purge be premixed; and in plethoric or inflammatory cases, or where the fever personates a remittent, venesection is necessary.

These salts are most commonly taken in a liquid form, largely diluted: or in that of a bolus, which should be made up only as it is wanted. The dose is from a grain or two to ten or twelve. Ten drops of a well made spirit, or saturated solution, are reckoned to contain about a grain of salt. In intermittents, fifteen or twenty drops of the spirit are given in a tea-cupfull of cold spring water, and repeated five or six times in each intermission.

The volatile salts and spirits prepared from different animal substances, have been supposed capable of producing different effects on the human body, and to receive specific virtues from the subject. The salt of vipers has been esteemed particularly serviceable

vicable in disorders occasioned by the bite of that animal; and a salt drawn from the human skull, in diseases of the head. But modern practice acknowledges no such different effects from these preparations; and chemical experiments have shewn their identity. There is, indeed, when not sufficiently purified, a very perceptible difference in the smell, taste, degree of pungency, and volatility of these salts; and in this state their medicinal virtues vary considerably enough to deserve notice: but this difference they have in common, according as they are more or less loaded with oil, not as they are produced from this or that animal substance. As first distilled, they may be considered as a kind of volatile sope, in which the oil is the prevailing principle; in this state they have much less of the proper alkaline acrimony and pungency than when they have undergone repeated distillations, and such other operations as disengage the oil from the salt; for by these means they lose their saponaceous quality, and acquiring greater degrees of acrimony, become medicines of a different class. These preparations therefore do not differ nearly so much from each other, as they do from themselves in different states of purity. To which may be added, that when we consider them as loaded with oil, the virtues of a distilled animal oil itself are likewise to be brought into the account.

These oils, as first distilled, are highly fetid and offensive, of an extremely heating quality, and of such activity, that, according to Hoffman's account, half a drop

dissolved in a drachm of spirit of wine, is sufficient to raise a copious sweat. By repeated rectifications, they lose their offensiveness, and at the same time become mild in their medicinal operation. The rectified oils may be given to the quantity of twenty or thirty drops, and are said to be anodyne and antispasmodic, to procure a calm sleep and gentle sweat, without heating or agitating the body, as has been observed in treating of the *Oleum animale*. It is obvious, therefore, that the salts and spirits must differ, not only according to the quantity of oil they contain, but according to the quality of the oil itself in its different states.

The volatile salt and spirits, as first distilled, are of a brown colour, and a very offensive smell: by repeated rectification, as directed in the processes above set down, they lose great part of the oil on which these qualities depend, the salt becomes white, and the spirit limpid as water, and of a grateful odour; and this is the mark of sufficient rectification.

It has been objected to the repeated rectification of these preparations, that, by separating the oil, it renders them similar to the pure salt and spirit of sal ammoniac, which are procurable at an easier rate. But the intention is not to purify them wholly from the oil, but to separate the grosser part, and to subtilize the rest, so as to bring it towards the same state as when the oil is rectified by itself. The rectification of spirit of hartshorn, has been repeated twenty times successively, and the spirit found still to participate of oil, but

of an oil very different from what it was in the first distillation.

The rectified oils, in long keeping become again fetid. The salts and spirits also, however carefully rectified, suffer in length of time the same change; refusing their original brown colour and ill smell; a proof that the rectification is far from having divested them of oil. Any intentions, however, which they are thus capable of answering, may be as effectually accomplished by a mixture of the volatile alkali with the oleum animale, in its rectified state, to any extent that may be thought necessary.

KALI VITRIOLATUM.

Lond.

Vitriolated Kali.

Take of

The salt which remains after the distillation of the nitrous acid, two pounds.

Distilled water, two gallons.
Burn out the superfluous acid, with a strong fire, in an open vessel: then boil it a little while in the water; strain, and set the liquor aside to crystallise.

THE salt thus formed, is the same with the vitriolated tartar of the last edition of the London Pharmacopœia; but it is now prepared in a cheaper and easier manner, at least for those who distil the nitrous acid. In both ways a neutral is formed, consisting of the fixed vegetable alkali, united to the vitriolic acid. But a similar compound may also be obtained by the following

process of the Edinburgh Pharmacopœia.

LIXIVA VITRIOLATA, vulgaris TARTARUM VITRIOLATUM.

Edinb.

Vitriolated lixive, commonly called
Vitriolated Tartar.

Take of

Vitriolic acid, diluted with six times its weight of water, as much as you please.

Put it into a capacious glass vessel, and gradually drop into it, of purified lixive diluted with six times its weight of water, as much as is sufficient thoroughly to neutralise the acid. The effervescence being finished, strain the liquor through paper; and after proper evaporation, set it aside to crystallise.

THIS is an elegant, and one of the least troublesome ways of preparing this salt. The Edinburgh College, in their former editions, ordered the acid liquor to be dropped into the alkaline: by the converse procedure now received, it is obviously more easy to secure against a redundancy of acidity; and for the greater certainty in this point, it may be expedient, to drop in a little more of the alkaline ley than the cessation of the effervescence seems to require.

In a former edition of the same Pharmacopœia, the acid was directed to be diluted only with its equal weight of water, and the alkali with that quantity of water which it is capable of imbibing from the atmosphere. By that imperfection there was not water enough to keep the vitriolated tartar

tartar dissolved; on which account, as salt as the alkali was neutralised by the acid, a great part fell to the bottom in a powdery form. In order to obtain perfect and well formed crystals the liquor should not be evaporated by long boiling and then set in the cold, but continued in a moderate heat, such as the hand can easily bear, that the water may slowly evaporate.

It is remarkable, that although the vitriolic acid and fixed alkaline salt each readily unite with water and strongly attract moisture, even from the air, yet the neutral resulting from the combination of these two, is one of the salts most difficult of solution, very little of it being taken up by cold water.

Vitriolated tartar, in small doses, as a scruple or half a drachm, is an useful aperient; in large ones, as four or five drachms, a mild cathartic which does not pass off so hastily as the *magnesia vitriolata* or *Soda vitriolata*, and seems to extend its action further.

LIXIVA VITRIOLATA SULPHUREA, vulgo SAL POLYCHRESTUS.

Edin.

Sulphurous vitriolated lixivæ, commonly called Salt of many virtues.

Take

Nitre in powder,

Flowers of sulphur, of each equal parts.

Mix them well together, and inject the mixture, by little and little at a time, into a red hot crucible: the deflagration being over, let the salt cool, after which it is to be put up in a glass vessel well stoped. The salt may be purified by dissolving it in warm water, filtering the

solution, and crystallising it again.

THIS is another method of uniting the vitriolic acid with the vegetable fixt alkali; the nitre being decomposed and the sulphur changed into vitriolic acid.

NATRON VITRIOLATUM.

Lond.

Vitriolated Natron.

Take of

The salt which remains after the distillation of the muriatic acid, two pounds;

Distilled water, two pints and an half.

Burn out the superfluous acid with a strong fire, in an open vessel; then boil it for a little in the water: strain the solution, and set it by to crystallise.

SODA VITRIOLATA, vulgo SAL GLAUBERI.

Edin.

Vitriolated Soda, commonly called Glauber's Salt.

Dissolve in warm water the mass which remains after the distillation of the muriatic acid; filter the solution, and crystallise the salt.

THE directions given for the preparation of this salt, long known by the name of *Sal mirabile Glauberi*, are nearly the same in the pharmacopœias of both colleges.

In a former edition of the Edinburgh pharmacopœia, it was ordered, that if the crystals (obtained as above) proved too sharp, they should be again dissolved in water, and the filtered liquor evaporated to such a pitch only as may

may dispose the salt to crystallise. But there is no great danger of the crystals proving too sharp, even when the muriatic acid is made with the largest proportion of oil of vitriol directed under that process. The liquor which remains after the crystallisation is indeed very acid; and with regard to this preparation, it is convenient it should be so; for otherwise the crystals will be very small, and likewise in a small quantity. Where a sufficient proportion of vitriolic acid has not been employed in the distillation of the muriatic acid it is necessary to add some to the liquor, in order to promote the crystallisation of the salt.

The title of *sal catharticus*, which this salt has often had, expresses its medical virtues. Taken from half an ounce to an ounce, or more, it proves a mild and useful purgative; and in smaller doses largely diluted, a serviceable aperient and diuretic. The shops frequently substitute for it the *magnesia vitriolata* which is somewhat more unpleasant, and less mild in operation. They are very easily distinguishable from each other, by the effect of alkaline salts on solutions of them. The solutions of Glauber's salt suffer no visible change from this addition, its own basis being fixt alkali: but the solution of the vitriolated magnesia grows instantly white and turbid, its basis, which is magnesia, being extricated copiously by the alkaline salt.

NITRUM PURIFICATUM.

Lond.

Purified Nitre.

Take of

Nitre, two pounds;

Distilled water, four pints.

Boil the nitre in the water till it be dissolved; strain the solution, and set it aside to crystallise.

COMMON nitre contains usually a considerable portion of sea-salt, which in this process is separated, the sea-salt remaining dissolved after the greatest part of the nitre has crystallised. The crystals which shoot after the first evaporation are large, regular, and pure: but when the remaining liquor is further evaporated, and this repeated a second or third time, the crystals prove at length small, imperfect, and tipped with little cubical crystals of sea salt.

KALI ACETATUM.

Lond.

Acetated Kali.

Take of

Kali, one pound.

Boil it, with a slow fire, in four or five times its quantity of distilled vinegar; the effervescence ceasing, add, at different times, more distilled vinegar, until the last vinegar being nearly evaporated, the addition of fresh will excite no effervescence, which will happen when about twenty pounds of distilled vinegar are consumed; afterwards let it be dried slowly. An impure salt will be left, which melt for a little while with a slow fire; then let it be dissolved in water, and filtered through paper.

If the fusion has been rightly performed, the strained liquor will be colourless; if otherwise, of a brown colour.

Lastly, evaporate this liquor with a slow fire, in a very shallow glass vessel; frequently stirring the mass, that the salt may be more

more completely dried, which should be kept in a vessel close stopd.

The salt ought to be very white, and dissolve wholly, both in water and spirit of wine, without leaving any feces. If the salt, although white, should deposit any feces in spirit of wine, that solution in the spirit should be filtered through paper, and the salt again dried.

LIXIVA ACETATA, vulgo, TARTARUM REGENERATUM.

Edin.

Autated lixive, commonly called *Regenerated Tartar*.

Take of

Purified lixive, one pound.
Boil it with a very gentle heat in four or five times its quantity of distilled vinegar; add more distilled vinegar, at different times, till on the watery part of the former quantity being nearly dissipated by evaporation, the new addition of vinegar ceases to raise any effervescence. This happens, when about twenty pounds of distilled vinegar has been consumed. The impure salt remaining after the exsiccation, is to be melted with a gentle heat and kept fluid only for a short time; then dissolve it in water, and strain through paper. If the liquefaction has been properly performed, the strained liquor will be limpid; but if otherwise, of a brown colour.

Evaporate this liquor with a very gentle heat in a shallow glass vessel, occasionally stirring the salt as it becomes dry, that its moisture may sooner be dissipated. Then put it up into a ves-

sel very closely stopd, to prevent it from liquefying in the air.

THE purification of this salt is not a little troublesome. The operator must be particularly careful in melting it, not to use a great heat, or to keep it long liquefied: a little should be occasionally taken out, and put into water; and as soon as it begins to part freely with its black colour, the whole is to be removed from the fire. In the last drying, the heat must not be so great as to melt it; otherwise it will not prove totally soluble. If the solution in spirit of wine be exsiccated, and the remaining salt liquefied with a very gentle fire, it gains the leafy appearance which has procured it the name *Terra foliata tartari*.

In the fourth volume of the Memoirs of the correspondents of the French Academy, Mr Cadet has given an excellent method of making the salt white at the first evaporation, without the trouble of any further purification. He observes, that the brown colour depends on the oily matter of the vinegar being burnt by the heat commonly employed in the evaporation: and his improvement consists in diminishing the heat at the time that this burning is liable to happen. The process he recommends is as follows.

Dissolve a pound of salt of tartar in a sufficient quantity of cold water; filtre the solution, and add by degrees as much distilled vinegar as will saturate it, or a little more. Set the liquor to evaporate in a stone-ware vessel in a gentle heat, not so strong as to make it boil. When a pellicle appears on the surface, the rest of the process must be finished

finished in a water-bath. The liquor acquires, by degrees an oily consistence and a pretty deep brown colour; but the pellicle or scum on the top looks whitish, and when taken off and cooled, appears a congeries of little brilliant silver-like plates. The matter is to be kept continually stirring, till it be wholly changed into this white flaky substance; the complete drying of which is most conveniently effected in a warm oven.

The *Lixiva acetata*, which way soever prepared, provided it be properly made, is a medicine of great efficacy, and may be so dosed and managed as to prove either mildly cathartic, or powerfully diuretic: few of the saline deobstruents come up to it in virtue. The dose is from half a scruple to a drachm or two. A bare mixture, however, of alkaline salt and vinegar, without exsiccation, is not perhaps much inferior as a medicine to the more elaborate salt. Two drachms of the alkali, saturated with vinegar, have been known to occasion ten or twelve stools in hydropic cases, and a plentiful discharge of urine, without any inconvenience.

AQUA AMMONIÆ ACETATÆ.

Lond.

Water of acetated Ammonia.

Take of

Ammonia, by weight, two ounces;

Distilled vinegar, four pints; or as much as is sufficient to saturate the ammonia.

Mix.

AQUA AMMONIÆ ACETATÆ, vulgo SPIRITUS MINDERERI.

Edinb.

Water of Acetated Ammonia, commonly called Spirit of Mindereri.

Take any quantity of prepared ammonia, and gradually pour as much distilled vinegar on it as is sufficient to saturate it completely.

THOUGH this article has long been known by the name of Spiritus Mindereri, so called from the inventor; yet the name used by both colleges is undoubtedly preferable, as giving a proper idea of its constituent parts.

This is an excellent aperient saline liquor. Taken warm in bed, it generally proves a powerful diaphoretic or sudorific; and as it operates without heat, it has place in febrile and inflammatory disorders, where medicines of the warm kind, if they fail of procuring sweat, aggravate the distemper. Its action may likewise be determined to the kidneys, by walking about in a cool air. The common dose is half an ounce, either by itself, or along with other medicines adapted to the intention. Its strength is not a little precarious, depending much on that of the vinegar; an inconvenience which cannot easily be obviated, for this saline matter is not reducible to the form of a concrete salt.

KALI TARTARISATUM.

Lond.

Tartarified Kali.

Take of

Prepared kali one pound.

Cybal

Crystals of tartar, three pounds;
Distilled water, boiling, one
gallon.

To the kali, dissolved in the wa-
ter, throw in gradually the
crystals of tartar powdered;
filtre the liquor, when cold,
through paper: and, after due
evaporation, set it apart to
crystallise.

LIXIVA TARTARISATA, vulgo TARTARUM SOLU- BILE.

Edin.

Tartarised Lixive, commonly cal-
led *Soluble Tartar*.

Take of

Purified Lixive, one pound;
Water, fifteen pounds.

To the salt dissolved in the boiling
water gradually add crystals of
tartar in fine powder, as long
as any effervescence rises, which
generally ceases before three
times the weight of the alkaline
salt hath been added; then
strain the cooled liquor through
paper, and after due evapo-
ration set it aside to crystal-
lise.

Common white tartar is per-
haps preferable for this operation
to the crystals usually met with.
Its impurities can here be no ob-
jection; since it will be suffici-
ently depurated by the subsequent
filtration.

The preparation of this medi-
cine by either of the above methods
is very easy; though some che-
mists have rendered it sufficiently
troublesome, by a nicety which
is not at all wanted. They insist
upon hitting the very exact point
of saturation between the alkaline
salt and the acid of the tartar;
and caution the operator to be

extremely careful, when he comes
near this mark, lest by imprudent-
ly adding too large a portion of
either, he render the salt too acid
or too alkaline. If the liquor be
suffered to cool a little before it
be committed to the filtre, and
then properly exhaled and crystal-
lised, no error of this kind can
happen, though the saturation
should not be very exactly hit;
for since crystals of tartar are
very difficultly soluble even in
boiling water, and when dissolved
therein concreate again upon the
liquor's growing cold, if any more
of them has been employed than
is taken up by the alkali, this
superfluous quantity will be left
upon the filtre; and on the other
hand when too much of the alkali
has been used, it will remain un-
crystallised. The crystallisation of
this salt indeed cannot be effected
without a good deal of trouble:
it is therefore most convenient to
let the acid salt prevail at first;
to separate the superfluous quan-
tity, by suffering the liquor to
cool a little before filtration; and
then proceed to the total evapora-
tion of the aqueous fluid, which
will leave behind it the neutral
salt required. The most pro-
per vessel for this purpose is a stone-
ware one; iron discolours the salt.

In doses of a scruple, half a
drachm, or a drachm, this salt is
a mild cooling aperient: two or
three drachms common, loosen
the belly; and an ounce proves
pretty strongly purgative. It has
been particularly recommended as
a purgative for maniacal and me-
lancholic patients. Malouin says,
it is equal in purgative virtue to
the cathartic salt of Glauber. It
is an useful addition to the pur-
gatives of the resinous kind, as it
promotes their operation, and as

the same time tends to correct their griping quality. But it must never be given in conjunction with any acid; for all acids decompose it, absorbing its alkaline salt, and precipitating the tartar. On this account it is improper to join it with tamarinds, or such like acid fruits; which is too often done in the extemporaneous practice of those physicians who are fond of mixing different cathartics together, and know little of chemistry.

NATRON TARTARISATUM.

Lond.

Tartarised Natron.

Take of

Natron, twenty ounces;
Crystals of tartar, powdered,
two pounds;
Distilled water, boiling, ten
pints.

Dissolve the natron in the water, and gradually add the crystals of tartar: filtre the liquor through paper; evaporate, and set it aside to crystallise.

SODA TARTARISATA, vulgo SAL RUPELLENSIS.

Edinb.

Tartarised Soda, commonly called
Rochel Salt.

Lixiva tartarisata.

The *Sal Rupellensis* may be prepared from purified soda and crystals of tartar, in the same manner as directed for the *Lixiva tartarisata*.

THIS is a species of soluble tartar, made with fossil alkali. It crystallises more easily than the preceding preparation, and does not, like it, grow moist in the air. It is also considerably less

purgative, but is equally decomposed by acids. It appears to be a very elegant salt, and is in as great esteem in this country, as it has long been in France, being used instead of the Glauber's and Epsom Salts.

SODA PHOSPHORATA.

Edin.

Phosphorated Soda.

Take of

Bones burnt to white ashes and powdered, ten pounds;
Vitriolic acid, six pounds;
Water, nine pounds.

Mix the powder and acid together in an earthen vessel; then add the water, and stir the whole so as to mix it thoroughly. Place the vessel in a vapour bath, and digest for three days; after which dilute the mass with nine pounds more of boiling water, and strain the liquor through a strong linen cloth, adding at the end some more warm water, that all the acidity may be well washed out. Set by the strained liquor that the impurities may subside, and decant the clear solution. Evaporate it till only nine pounds remain, and let it stand till the impurities subside. This second liquor poured from the impurities must be evaporated again till seven pounds remain, which must be set a third time to deposit its impurities, after which it is to be filtered; this filtered liquor contains the phosphoric acid sufficiently pure, to which heated a little, add purified soda dissolved in warm water until the effervescence ceases. Filter the neutralised liquor, and let it aside to crystallise. The liquor that remains after the crystals

are taken out must be farther neutralised by the addition of soda if necessary, evaporated and set aside to crystallise again : and this must be repeated as long as any crystals can be obtained.

THE phosphorated soda is a neutral salt, lately introduced into the practice of physic by the ingenious Dr Pearson of Leicester Square, London. It is possessed of the same medical qualities as Glauber's and the Rochelle Salt, being an excellent purge in the quantity of an ounce or ten drachms ; and has the peculiar advantage over these two salts in being much less nauseous than they are. Its taste is extremely similar to that of common salt ; and when given in a basin of water-gruel or veal broth it is scarcely perceptible by the palate, and consequently is well adapted for patients whose stomachs are delicate, and who have an antipathy against the Glauber's or Rochelle salt.

The only obstacle to its general use, in preference to the two salts above mentioned, is its high price : it is certainly much more agreeable to the palate and stomach than they are, and it is equally efficacious in its operation.

ALUMINIS PURIFICATIO.

Lond.

Purification of Alum.

Take of

Alum, one pound ;

Chalk, one drachm ;

Distilled water, one pint.

Boil them a little, strain, and set the liquor aside to crystallize.

We have already offered some

observations on alum in the Materia Medica ; and in general it comes from the alum works in England in a state of such purity as to be fit for every purpose in medicine : accordingly we do not observe that the purification of alum has a place in any other pharmacopœia ; but by the present process it will be freed, not only from different impurities, but also from superabundant acid.

ALUMEN USTUM.

Lond. Edinb.

Burnt Alum.

Take of

Alum, half a pound.

Burn it in an earthen vessel until it ceases to bubble.

THIS, with strict propriety, ought rather to be called dried, than burnt alum : for the only effect of the burning here directed is to expel the water. In this state it is so acrid as to be frequently employed as an escharotic ; and it is chiefly, with this intention, that it has a place in our pharmacopœia : it has sometimes been also taken internally, especially in cases of cholera.

SAL five SACCHARUM LACTIS.

Succ.

Take of milky whey, prepared by rennet, any quantity : let it be boiled over a moderate fire to the consistence of a syrup ; then put it in a cold place, that crystals may be formed. Let the fluid which remains be again managed in the same manner, and let the crystals formed be washed with cold water.

℞

It has been imagined, that the superiority of one milk over another depends on its containing a larger proportion of this saline or saccharine part; and particularly, that upon this the reputed virtues of asses milk depend. Hence this preparation has been greatly celebrated in disorders of the breast, but it is far from answering what has been expected from it. It has little sweetness, and is difficult of solution in water. A saline substance, much better deserving the name of sugar, may be obtained by evaporating new milk, particularly that of asses, to dryness, digesting the dry matter in water till the water has extracted its soluble parts, and then infusing the filtered liquor. This preparation is of great sweetness, though neither white nor crystalline; nor is it perhaps in the pure crystallisable parts of milk that its medicinal virtues reside; and so little reliance is put on it as a medicine, that it has no place in the London or Edinburgh pharmacopœias; although it has long stood, and still stands, in the foreign ones.

SAL ACETOSELLÆ.

Succ.

Salt of Sorrel.

Take any quantity of the expressed juice of the leaves of wood sorrel; let it boil gently, that the feculent matter may be separated; then strain it till it be clear, and after this boil it on a moderate fire to the consistence of a syrup. Put it into long necked glass vessels, and place it in a cold situation that it may crystallise. Let these crystals be dissolved in water, and again formed into purer ones.

To make the sorrel yield its juice readily, it should be cut to pieces, and well bruised in a small mortar, before it be committed to the press. The magna which remains in the bag still retaining no inconsiderable quantity of saline matter, may be advantageously boiled in water, and the decoction added to the expressed juice. The whole may be afterwards depurated together, either by the method above directed, or by running the liquor several times through a linen cloth. In some cases, the addition of a considerable portion of water is necessary, that the juice, thus diluted, may part the more freely with its feculencies; on the separation of which the success of the process much depends.

The evaporation should be performed either in shallow glass basins, or in such earthen ones as are of a compact close texture. The common earthen vessels are subject to have their glazing corroded, and are so extremely porous, as readily to imbibe and retain a good quantity of the liquor; and metallic vessels are particularly apt to be corroded by these acid kinds of juices.

These juices are so viscid, and abound so much with heterogeneous matter, of a quite different nature from any thing saline, that a pellicle, or pure saline incrustation upon the surface, is in vain expected. Boerhaave therefore, and the more expert writers in pharmaceutical chemistry, with great judgment direct the evaporation of the superfluous moisture to be continued until the matter has acquired the consistence of cream. If it be now suffered to stand for an hour or two in a warm place, it will, notwithstanding the former depurations, deposit a fresh sediment,

ment, from which it should be warily decanted before it be put into the vessel in which it is designed to be crystallised.

Some recommend an unglazed earthen vessel as preferable for this purpose to a glass one; the smoothness of the latter being supposed to hinder the salt from sticking to it; while the juice easily insinuating itself into the pores of the former, has a great advantage of shooting its saline spicula to the sides. Others slightly incrustate the sides and bottom of whatever vessel they employ with a certain mineral salt, which greatly disposes the juice to crystallise, to which of itself it is very averse; but this addition alters the medicinal virtue of the salt.

The liquor which remains after the crystallisation may be depurated by a gentle colature, and after due inspissation set to shoot again; when a farther produce of crystals will be obtained.

The process for obtaining this salt is very tedious; and the quantity of salt which the juices afford is extremely small: hence they are scarcely ever made or expected to be found in the shops. They may be somewhat sooner separated from the mucilage and other feculencies, by clarification with whites of eggs, and by adding very pure white clay.

In the manner above described, salts may also be obtained from oyster acid, austere, and bitterish plants, which contain but a small quantity of oil.

The virtues of the essential salts have not been sufficiently determined from experience. Thus much, however, is certain, that they do not, as has been supposed, possess the virtues of the subjects entire,

excepting only the acids and sweets. The others seem to be, almost all of them, nearly similar, whatever plant they are obtained from. In watery extracts of wormwood, carduus, chamomile, and many other vegetables, kept for some time in a soft state, there may be observed fine saline efflorescences on the surface, which have all nearly the same taste, somewhat of the nitrous kind. They are supposed to be in reality no more than an impure species of ammoniacal nitre (that is, a salt composed of the nitrous acid and volatile alkali): those which were examined by the chemists of the French academy, deflagrated in the fire, and being triturated with fixt alkali, exhaled an urinous odour; plain marks of their containing these two ingredients.

SAL ACIDUM BORACIS.

Succ.

Acid Salt of Borax.

Take of

Borax, an ounce and a half,

Warm spring water, one pound.

Mix them in a glass vessel, that the borax may be dissolved; then pour into it three drachms of the concentrated vitriolic acid; evaporate the liquor till a pellicle appears upon it: after this let it remain at rest till the crystals be formed. Let them be washed with cold water and kept for use.

THIS salt, which has long been known by the title of *Sal sedativus Hombergii*, is sometimes formed by sublimation: but the process by crystallisation here directed is less troublesome, though the salt proves generally less white, and is apt like-

likewise to retain a part of Glauber's salt, especially if the evaporation be long protracted.

The acid of borax appears to the taste to be a neutral; but when it is examined by alkalis, it shews the properties of an acid, effervescing, uniting, and crystallising with them, and it destroys their alkaline quality. It dissolves, although not very readily, both in water and spirit of wine.

The virtues attributed to it may in some degree be inferred from the name of *Sedative*, by which it was long distinguished. It has been supposed to be a mild anodyne, to diminish febrile heat, to prevent or remove delirium; and to allay, at least for some time, spasmodical affections, particularly those which are the attendants of hypochondriasis and hysteria. It may be given in doses of from two to twenty grains.

SAL AMMONIACUM DEPURATUM.

Succ.

Purified Sal ammoniac.

Dissolve sal ammoniac in spring-water; strain the liquor through paper; evaporate it to dryness in a glass vessel, by means of a moderate fire.

THE sal ammoniac imported from the Mediterranean often contains such impurities as to render the above process necessary; but that which is prepared in Britain, is in general brought to market in a state of very great purity. Hence this process is now omitted both in the London and Edinburgh pharmacopœias.

C H A P. VIII.

M A G N E S I A.

M A G N E S I A.

MAGNESIA ALBA.

*Lond.**White Magnesia.*

Take of

Vitriolated magnesia,

Kali, each two pounds:

Distilled water, boiling, twenty
pints.

Diffolve the vitriolated magnesia and the kali separately in ten pints of water, and filtre each through paper; then mix them. Boil the liquor a little while, and strain it while hot through linen, upon which the magnesia will remain; then wash away, by repeated affusions of distilled water, the vitriolated kali.

MAGNESIA ALBA.

*Edinb.**White Magnesia.*

Take of

Vitriolated magnesia;

Purified lixive, equal weights.

Diffolve them separately in double their quantity of warm water, and let the liquors be strained or otherwise freed from the

feces: then mix them, and instantly add eight times their quantity of warm water. Let the liquor boil a little, stirring it very well at the same time; then let it rest till the heat be somewhat diminished; after which strain it through a cloth; the magnesia will remain upon the cloth, and is to be washed with pure water till it be altogether void of saline taste.

THE processes here directed by the London and Edinburgh colleges are nearly the same.

The *vitriolated magnesia* or *Epsom salt*, is the vitriolic acid and magnesia. In this process then a double elective attraction takes place: the vitriolic acid forsakes the magnesia and joins the pure alkali, for which it has a greater attraction; while the magnesia in its turn unites with the fixed air discharged from the mild alkali, and ready to be absorbed by any substance with which it can combine.

We have therefore two new products, viz. a vitriolated tartar, and magnesia united with fixed air. The

The former is dissolved in the water, and may be preserved for use; the latter, as being much less soluble, sinks to the bottom of the vessel. The intention of employing such a large quantity of water and of the boiling is, that the vitriolated tartar may be all thoroughly dissolved, this salt being so difficultly soluble in water, that without this expedient a part of it might be precipitated along with the magnesia. It might perhaps be more convenient to employ the mineral alkali; which forming a Glauber's salt with the vitriolic acid; would require less water for its suspension. B, the after ablutions, however, the magnesia is sufficiently freed from any portion of vitriolated tartar which may have adhered to it.

The ablutions should be made with very pure water; for nicer purposes distilled water may be used, and soft water is in every case necessary. Hard water for this process is peculiarly inadmissible, as the principle in waters, giving the property called *hardness*, is generally owing to selenite, whose base is capable of being disengaged by magnesia united with fixed air. For though the attraction of magnesia itself for acids is not greater than that of calcareous earth: yet when combined with fixed air, a double decomposition takes place, for the sum of the forces tending to join the calcareous earth with the air of the magnesia, and the magnesia with the acid, is greater than the sum of the forces tending to join the calcareous earth with the acid, and the magnesia with the fixed air: Hence if hard water be used, a quantity of calcareous earth must infallibly be deposited on the magnesia; while the acid, with which the calcareous earth

was combined in the water, will in its turn attach itself to a portion of the magnesia.

All the alkalis and also calcareous earths, have a greater attraction for fixed air than magnesia has: Hence, if this last be precipitated from its solution in acids by caustic alkali, it is then procured free from fixed air: but for this purpose calcination, which is described in the following process, is generally employed.

Magnesia alba, when prepared in perfection, is a white and very subtle earth, perfectly void of smell or taste, of the class of those which dissolve in acids. It dissolves freely in the vitriolic acid, and forms with it the bitter purging, or Epsom salt, very easily soluble in water; while the common absorbents form with the same acid almost insipid concretes, very difficult of solution. Solutions of magnesia in all acids are bitter and purgative; while those of the other earths are more or less austere and astringent. A large dose of magnesia, if the stomach contain no acid to dissolve it neither purges nor produces any sensible effect: a moderate one, if an acid be lodged there, or if acid liquors be taken after it, procures several stools; whereas the common absorbents, in the same circumstances, instead of loosening, bind the belly. It is obvious, therefore that magnesia is specifically different from the other earths, and that it is applicable to several useful purposes in medicine.

Magnesia is the same species of earth with that obtained from the mother-ley of nitre, which was for several years a celebrated secret in the hands of some particular persons abroad. Hoffman, who describes the preparations of the nitrous magnesia, gives it the character

ter of an useful antacid, a safe and inoffensive laxative in doses of a drachm or two, and a diaphoretic and diuretic when given in smaller doses of fifteen or twenty grains. Since his time, it has had a considerable place in the practice of foreign physicians; and is now in great esteem among us, particularly in heart-burns, and for preventing or removing the many disorders of children from a redundancy of acid in the first passages: It is preferred, on account of its laxative quality, to the calcareous absorbents, which, unless gentle purgatives be occasionally given to carry them off, are apt to lodge in the body, and occasion a colliculus very detrimental to infants.

Magnesia has gone under different names, as the *White powder of the Count of Palma*, *Powder of Sentinelle*, *Polychrest*, *Laxative powder*, &c. It seems to have got the character *alba* to distinguish it from the dark coloured mineral *magnese* called also *magnesia nigra*, a substance possessing very different properties. Pure native magnesia has never been found in its uncombined state. A combination of it with sulphur has been discovered to cover a stratum of coal at Littry in Lower Normandy. It is also found in several stones, especially those called serpentine and soap rock.

MAGNESIA USTA.

Lond.

Calcined magnesia.

Take of

White magnesia, four ounces.

Expose it to a strong heat for two hours; and, when, cold set it

by. Keep it in a vessel closely stoppt.

MAGNESIA USTA.

Edin.

Calcined magnesia.

Let magnesia, put into a crucible be continued in a red heat for two hours: then put it up in close glass vessels.

By this process the magnesia is freed of fixed air; and according to Dr Black's experiment, loses about $\frac{7}{8}$ of its weight. A kind of opaque foggy vapour is observed to escape during the calcination, which is nothing else than a quantity of fine particles of magnesia buoyed off along with a stream of the disengaged air. About the end of the operation, the magnesia exhibits a kind of luminous, or phosphorescent property, which may be considered as a pretty exact criterion of its being deprived of air.

Calcined magnesia is equally mild as that which is saturated with fixed air; and this circumstance is sufficient to establish a difference between it and calcareous earths; all of which are converted, by calcination, into a caustic quicklime.

The magnesia usta is used for the same general purposes as the magnesia combined with fixed air. In certain affections of the stomach, accompanied with much flatulence, the calcined magnesia is found preferable, both because it contains more of the real earth of magnesia in a given quantity, and being deprived of its air, it neutralises the acid of the stomach, without any extrication of air.

air, which is often a troublesome consequence when aerated magnesia is employed in these complaints. It is proper to observe, that magnesia, whether combined with, or deprived of, fixt air, is similar to calcareous earth in

promoting and increasing putrefaction. The same has even been observed with respect to the Epsom and some other salts which have this earth for their base.

C H A P. IX.

PRÆPARATAE SULPHURÆ.

PREPARATIONS OF SULPHUR.

FLORES SULPHURIS
LOTI.*Lond. Edin.**Washed flowers of Sulphur.*

Take of

Flowers of sulphur, one pound;

Distilled water, four pints.

Boil the flowers of sulphur a little while in the distilled water; then pour off this water, and wash off the acid with cold water; lastly, dry the flowers.

Is the former editions of our pharmacopœias, directions were given for the preparation of the flowers of sulphur themselves:

But it is now scarcely ever attempted by the apothecaries. When the flowers are properly prepared, no change is made on the qualities of the sulphur. Its impurities only are separated; and at the same time it is reduced to a finer powder than it can easily be brought to by any other means.

But as the flowers of sulphur are generally sublimed in very capacious rooms, which contain a large quantity of air, or in vessels

not perfectly close; some of the sulphur that arises at first is apt to take fire, and be thus changed into a volatile acid vapour, which mixing with the flowers that sublime afterwards, communicates to them a considerable degree of acidity. In this case, the ablation here directed is absolutely necessary: for the flowers, thus tainted with acid, sometimes occasion gripes, and may, in other respects, be productive of effects different from those of pure sulphur.

KALI SULPHURATUM.

*Lond.**Sulphurated Kali.*

Take of

Flowers of sulphur, one ounce;

Kali, five ounces.

To the sulphur melted with a gentle fire, add the kali; mix them by stirring them well together, until they unite into an uniform mass.

This preparation in the former editions of our pharmacopœias had the name of *hepar sulphuris*.

It

It much more convenient to melt the sulphur first by itself, and add the kali as here directed, than to grind them together, and afterwards endeavour to melt them as ordered in former editions : For in this last case the mixture will not flow sufficiently thin to be properly united by stirring ; and the sulphur either takes fire, or sublimes in flowers ; which probably has been the reason why so large a proportion of it has been commonly directed.

The *hepar sulphuris* has a fetid smell, and a nauseous taste. Solutions of it in water, made with sugar into a syrup, have been recommended in coughs and other disorders of the breast. Our *Pharmacopœias*, nevertheless, have deservedly rejected the syrup. Solutions of the *hepar*, in water, have been recommended in herpetic and other cutaneous affections. Some physicians have even employed this solution, in a large quantity, as a bath for the cure of *plora* ; and in cases of *tinea capitis*, it has often been used by way of lotion. It has also been recommended as an antidote against the mineral poisons.

The *hepar*, digested in rectified spirit of wine, imparts a rich gold colour, a warm, somewhat aromatic taste, and a peculiar, not ungrateful smell.

OLEUM SULPHURATUM ET PETROLEUM SUL- PHURATUM.

Lond.

Sulphurated Oil and sulphurated Petroleum.

Take of

Flowers of sulphur, four ounce

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Olive oil, sixteen ounces, by weight.

Boil the flowers of sulphur, with the oil, in a pot slightly covered, until they be united.

In the same manner is made *sulphurated petroleum*.

OLEUM SULPHURATUM, vulgo BALSAMUM SULPHU- RIS CRASSUM.

Edin.

Sulphurated Oil, commonly called *thick Balsam of Sulphur*.

Take of

Olive oil, eight ounces ;

Flowers of Sulphur, one ounce.

Boil them together in a large iron pot, stirring them continually till they unite.

These are the only Balsams of sulphur now retained in our pharmacopœias ; formerly there were and still are, in some of the foreign pharmacopœias, long lists of them made with different oils expressed and essential, or with a mixture of both kinds, as *Balsamum sulphuris anisatum*, *terebinthinaum*, &c.

These preparations are more conveniently and safely made in a tall glass vessel with a wide mouth, than in the circulatory or close vessels in which they have commonly been directed to be prepared : for when the sulphur and oil begin to act vehemently on each other, they not only swell, but likewise throw out impetuously great quantities of an elastic vapour ; which, if the vessels be closed, or the orifices not sufficient to allow it a free exit, will infallibly burst them : Hoffman relates a very remarkable history of the effects of an accident of this kind. In the vessel above recommended

mended, the process may be completed, without danger, in four or five hours, by duly managing the fire, which should be very gentle for some time, and afterwards increased so as to make the oil just bubble or boil; in which state it should be kept till all the sulphur appears to be taken up.

Balsam of sulphur has been strongly recommended in coughs, consumptions, and other disorders of the breast and lungs: But the reputation which it had in these cases, does not appear to have been built on any fair trial or experience. It is manifestly hot, acrimonious, and irritating; and should therefore be used with the utmost caution. It has frequently been found to injure the appetite, offend the stomach and viscera, parch the body, and occasion thirst and febrile heats. The dose of it is from ten to forty drops. It is employed externally for cleansing and healing foul running ulcers; and Boerhaave conjectures, that its use in these cases gives occasion to the virtues ascribed to it when taken internally.

SULPHUR PRÆCIPITATUM.

Lond.

Precipitated Sulphur.

Take of

Sulphurated kali, six ounces;

Distilled water, one pound and an half;

Diluted vitriolic acid, as much as is sufficient.

Boil the sulphurated kali in the distilled water until it be dissolved. Filter the liquor through paper, to which add the vitriolic acid. Wash the precipitated powder by repeated affusions of water till it becomes insipid.

This preparation is not so white as that of the salt pharimacopœia, which was made with quicklime; and which in some pharmacopœias had the name of *lac sulphuris*.

Precipitated sulphur is not different in quality from pure sulphur itself; to which it is preferred in unguents, &c. only on account of its colour. The whiteness does not proceed from the sulphur having lost any of its parts in the operation, or from any new matter superadded; for if common sulphur be ground with alkaline salts, and set to sublime, it rises of a like white colour, the whole quantity of the alkali remaining unchanged; and if the precipitated sulphur be melted with a gentle fire, it returns into a yellow sulphur again.

It may be observed, that the name *lac sulphuris*, or *milk of sulphur*, formerly given to the precipitate, is by the modern French writers confined to the white liquor before the precipitate has fallen from it.

C H A P. X.

P R E P A R A T A A N T I M O N I I.

P R E P A R A T I O N S O F A N T I M O N Y.

ANTIMONY is composed of a metal, united with sulphur.

If powdered antimony be exposed to a gentle fire, the sulphur exhales: the metallic part remaining in form of a white calx, reducible, by proper fluxes, into a whitish brittle metal, called *regulus*.

If aqua regia be poured on crude antimony, the metallic part will be dissolved; and the sulphur thrown out, partly to the sides of the vessel, and partly to the surface of the liquor, in the form of a greyish, yellow substance. This, separated and purified by sublimation, appears on all trials the same with pure common brimstone.

The metal freed from the sulphur naturally blended with it, and afterwards fused with common brimstone, resumes the appearance and qualities of crude antimony.

The antimonial metal is a medicine of the greatest power of any known substance; a quantity too minute to be sensible in the tenderest balance, is capable of producing violent effects, if taken dissolved, or in a soluble state. If given in such a form as to be immediately miscible with the anti-

mal fluids, it proves violently emetic, if so managed as to be more slowly acted on, cathartic; and in either case, if the dose be extremely small, diaphoretic. Thus, though vegetable acids extract so little from this metal, that the remainder seems to have lost nothing of its weight, the tinctures prove in no large doses strongly emetic, and in smaller ones powerfully diaphoretic. The regulus has been cast into the form of pills, which acted as violent cathartics, though without suffering any sensible diminution of weight in their passage through the body; and this repeatedly, for a great number of times.

This metal, reduced to a calx, becomes indissoluble and inactive. The calx, nevertheless, urged with a strong fire, melts into a glass, which is as easy of solution, and as violent in operation as the regulus itself: the glass, thoroughly mixed with such substances as prevent its solubility, as wax, resins, and the like, is again rendered mild.

Vegetable acids, as has already been observed, dissolve but an extremely minute portion of this metal:

metal: the solution nevertheless is powerfully emetic and cathartic. The nitrous and vitriolic acids only corrode it into a powder, to which they adhere so slightly as to be separable in a considerable degree by water, and totally by fire, leaving a calx similar to that prepared by fire. The muriatic acid has a very different effect; this reduces the regulus into a violent corrosive; and though it difficultly unites, yet it adheres so very closely as not to be separable by any ablation, nor by fire, and the regulus arises along with it in distillation.

Sulphur remarkably abates the power of this metal: and hence crude antimony, in which the regulus is combined with sulphur, from one-fourth to one half of its weight, proves altogether mild. If a part of the sulphur be taken away, by such operations as do not destroy or calcine the metal, the remaining mass becomes proportionally more active.

The sulphur of antimony may be expelled by deflagration with nitre; the larger the quantity of nitre, to a certain point, the more of the sulphur will be dissipated, and the preparation will be the more active. If the quantity of nitre be more than sufficient to consume the sulphur, the rest of it, deflagrating with the regulus itself, renders it again mild.

The sulphur of antimony is likewise absorbed, in fusion, by certain metals, and by alkaline salts. These last, when united with sulphur, prove a menstruum for all the metals (zinc excepted); and hence, if the fusion be long continued, the regulus is taken up, and rendered soluble in water.

From these particulars with re-

spect to antimony, it may naturally be concluded, that it not only furnishes us with an useful and active medicine, but that it may also be exhibited for medical purposes under a great variety of different forms, and that the effects of these will be considerably diversified. When treating of antimony in the materia medica, we have not only offered some observations on its medicinal virtues, but have also exhibited a view of its different preparations for medical purposes, thrown into a tabular form by Dr Black; which we shall proceed to describe in particular.

ANTIMONIUM CALCINATUM.

Lond.

Calcined Antimony.

Take of

Antimony, powdered, eight ounces;

Nitre, powdered, two pounds.

Mix them, and cast the mixture by degrees into a red hot crucible.

Burn the white matter about half an hour; and, when cold, powder it: after which wash it with distilled water.

IN the last edition of the London Pharmacopœia this preparation had the name of *calx antimonii*; and it may be considered as at least very nearly approaching to some other antimonials of the old pharmacopœias, particularly to the *antimonium diaphoreticum nitratum*, *antimonium diaphoreticum lotum*, and the *nitrum sibiatum*; none of which are now received as separate formulas of our pharmacopœias, and indeed even the calx antimonii itself, at least as thus prepared, has now no place in the Edinburgh pharmacopœia.

The

The calx of antimony, when freed by washing from the saline matter, is extremely mild, if not altogether inactive. Hoffman, Lemery and others, assure us, that they have never experienced from it any such effects as its old name *antimonium diaphoreticum* imports; Boerhaave declares, that it is a mere metallic earth, entirely destitute of all medicinal virtue: and the Committee of the London College admit, that it has no sensible operation. The common dose is from five grains to a scruple, or half a drachm; though Wilson relates, that he has known it given by half ounces, and repeated two or three times a day, for several days together.

Some report that this calx, by keeping for a length of time, contracts an emetic quality: From whence it has been concluded, that the powers of the reguline part are not entirely destroyed; that the preparation has the virtues of other antimonials which are given as alteratives; that is, in such small doses as not to stimulate the *primæ viæ*; and that therefore calcined antimony, is certainly among the mildest preparations of that mineral, and may be used for children, and similar delicate constitutions, where the stomach and intestines are easily affected. The observation, however, from which these conclusions are drawn, does not appear to be well founded: Ludowici relates, that after keeping the powder for four years, it proved as mild as at first: and the Strassburgh pharmacopœia with good reason suspects that where the calx has proved emetic, it had

either been given in such cases as would of themselves have been attended with this symptom, (for the great alexipharmac virtues attributed to it have occasioned it to be exhibited even in the more dangerous malignant fevers, and other disorders which are frequently accompanied with vomiting), or that it had not been sufficiently calcined, or perfectly freed from such part of the regulus as might remain uncalcined. The uncalcined part being grosser than the true calx, the separation is effected by often washing with water, in the same manner as directed for separating earthy powders from their grosser parts.

It has been observed, that when diaphoretic antimony is prepared with nitre abounding with sea-salt, of which all the common nitre contains some portion, the medicine has proved violently emetic. This effect is not owing to any particular quality of the sea salt, but to its quantity, by which the proportion of the nitre to the antimony is rendered less.

Notwithstanding the doubts entertained respecting the activity of the antimonium calcinatum, yet the London college have done right in retaining it. For while it is on all hands allowed, to be the mildest of our antimonials; there are some accurate observers who consider it as by no means ineffectual. Thus Dr Heald tells us, that he has been in the habit of employing it for upwards of forty years, and is much deceived, if when genuine it be not productive of good effects.

ANTIMONIUM USTUM
CUM NITRO, vulgo CALX
ANTIMONII NITRATA.

Edinb.

Nitrated Calx of Antimony.

Take of

Antimony, calcined for making
the glass of antimony :
Nitre, equal weights.

Having mixed, and put them into
a crucible, let them be heated,
so that the matter shall be of a
red colour for an hour ; then
let it be taken out of the cruci-
ble, and, after powdering it,
let it be repeatedly washed
with warm water till it be in-
spid.

As the effects of every prepa-
ration of antimony, not already
conjoined with an acid, must de-
pend on the quantity and condi-
tion of the acid in the stomach,
so the ablation of the base of the
nitre in this process, gives full
power to the acid of the stomach
to act as far as possible on the
calx : whereas when the unwashed
calx is employed, a great quanti-
ty of the acid in the stomach is
neutralised by the alkaline base of
the nitre adhering to the calx.

Although this preparation has
been considered as being nearly a
complete calx of antimony, yet it
is a medicine of a much more ac-
tive nature than the former ; and
in place of being one of the mildest
of the antimonials, it often ope-
rates with great violence when
given in doses of only a few
grains.

It has been thought by some
preferable to emetic tartar, where
the permanent effects of a long-
continued nausea are required, and
where we wish our antimonials

3 B

to pass the pylorus and produce
purging ; but, like every other
preparation where the reguline
part is only rendered active by the
acid in the stomach, it is in all
cases uncertain in operation :
sometimes proving perfectly inert,
and at other times very violent
in its effects. The dose is gene-
rally ten or twelve grains, and
this is often given all at once ; an
inconvenience not attending the
emetic tartar ; the quantity and
effects of which we can gene-
rally measure with surprising mi-
nuteness.

CROCUS ANTIMONII.

Lond.

Crocus of Antimony.

Take of

Antimony, powdered :

Nitre, powdered, of each one
pound ;

Sea salt, one ounce.

Mix, and put them by degrees
into a red hot crucible, and
melt them with an augmented
heat. Pour out the melted
matter : and, when cold, sepa-
rate it from the scorizæ.

CROCUS ANTIMONII, vulgo
CROCUS METALLORUM.

Edinb.

*Crocus of Antimony, commonly cal-
led Crocus of Metals.*

Take of

Antimony,

Nitre, equal weights.

After they are separately powdered
and well mixed, let them be
injected by degrees into a red-
hot crucible ; when the deto-
nation is over, separate the
reddish metallic matter from the
whitish crust ; powder it and

3 B

edulcorate it by repeated washings with hot water, till the water comes off insipid.

HERE the antimonial sulphur is almost totally consumed, and the metallic part left divested of its corrector. These preparations, in doses of from two to six grains, generally act as violent emetics, greatly disordering the constitution. But the operation, like that of every preparation of antimony whose reguline part is not joined with an acid, must be liable to variations, according to the quantity and condition of the acid in the stomach. Their principal use is in maniacal cases, or as the basis of some other preparations; it is much used by the ferriers, who frequently give to horses an ounce or two a day, divided into different doses, as an alterative; in these, and other quadrupeds, this medicine acts chiefly as a dia-phoretic.

The chemists have been accustomed to make the crocus with a less proportion of nitre than what is directed above; and without any farther melting than what ensues from the heat which the matter acquires by deflagration, which when the quantity is large, is very considerable: a little common salt is added by the London College to promote the fusion. The mixture is put by degrees into an iron pot or mortar, somewhat heated, and placed under a chimney: when the first ladlefull is in, a piece of lighted charcoal is thrown to it, which sets the matter on fire; the rest of the mixture is then added by little and little; the deflagration is soon over, and the whole appears in perfect fusion: when cold, a considerable quantity of scorix is found on the

surface, which are easily knocked off with a hammer.

ANTIMONIUM MURIATUM.

Lond.

Muriated Antimony.

ANTIMONIUM MURIATUM, vulgo BUTYRUM ANTIMONII.

Edin.

Muriated Antimony, commonly called, Butter of Antimony.

Take of

Crocus of antimony, powdered,

Vitriolic acid, each one pound;
Dry sea-salt, two pounds.

Pour the vitriolic acid into a retort, adding by degrees the sea salt and crocus of antimony, previously mixed; then distil in a sand-bath. Let the distilled matter be exposed to the air several days, and then let the fluid part be poured off from the dregs.

THE muriated antimony or butter, as it is called, is a solution of the metallic part of the antimony in the muriatic acid. This solution does not succeed with muriatic acid in its ordinary state, and cannot be effected, unless either the acid be highly concentrated, and both the ingredients strongly heated; or when the antimony is exposed to the vapours of the acid distilled from the black calx of manganese. By this last process a perfect solution of the regulus of antimony in the muriatic acid is effected. Of this more simple, more safe, and less expensive method of preparing muriated antimony, an account is given by Mr Ruffel in the Transactions

actions. of the Royal Society of Edinburgh; Vol. i.

The method, however now directed by both the colleges is preferable to any of the other methods of preparing it, being very nearly the same with Scheele's process which is given in the Pharmacopœia Suecica.

When the congealed matter that arises into the neck of the retort is liquefied by the moisture of the air, it proves less corrosive than when melted down and rectified by heat; though, it seems, in either case, to be sufficiently strong for the purposes of consuming fungous flesh and the callous lips of ulcers. It is remarkable, that though this saline concrete readily and almost entirely dissolves by the humidity of the air, only a small quantity of white powder separating, it nevertheless will not dissolve directly in water: even when previously liquefied by the air, the addition of water will precipitate the solution. And accordingly, by the addition of water is formed that once celebrated article known by the title of *mercurius vitæ*, or *Algarotti's powder*. This preparation, though never used by itself, is employed both by the Edinburgh and by some of the foreign colleges, in the formation of emetic tartar, the most useful of all the antimonials.

PULVIS ANTIMONIALIS.

Lond.
Antimonial powder.

Take of

Antimony, coarsely powdered;
Hartshorn-shavings, each two pounds.

ANTIMONIUM CALCAREO PHOSPHORATUM, five PULVIS ANTIMONIALIS.

Edin.

*Calcareo-Phosphorated Antimony, or
Antimonial powder.*

Take of

Antimony, in coarse powder, two pounds;

Saw-dust of bones, ivory, or hartshorn, two pounds.

Mix, and put them into a wide red-hot iron pot, stirring constantly till the mass acquires a grey colour. Powder the matter when cold, and put it into a coated crucible. Lute to it another crucible inverted, which has a small hole in its bottom: augment the fire by degrees to a red heat, and keep it so for two hours. Lastly, reduce the matter, when cold, to a very fine powder.

This preparation is the genuine James's powder, than which scarcely any patent medicine more attracted the attention of the medical practitioners and the people of England. Its efficacy in curing fevers soon brought it into celebrity; and it was at first frequently used by the patients without the approbation of the attending physicians; afterwards however we find physicians of respectability and experience prescribing this powder, without knowing what peculiar preparation it was, any farther than that it was some kind of calx of antimony. It could not be prepared by following the directions of the specification deposited in the Court of Chancery by Dr James when

when he took out his patent; hence *fidelis* was an epithet which, although it ought to be essential to every physician, could not with propriety be bestowed on him: And, what farther shews his disposition to deceive, it was not, at the time he took out his patent, a new medicine or preparation, but was fully described by physicians and chemists upwards of 120 years before. About thirty years had elapsed, since its being introduced into practice in Britain, before its real composition became known, for which the world is indebted to the ingenious Dr Pearson of London, who has analytically and synthetically demonstrated, by a very great number and variety of well contrived experiments, that James's powder is a compound of calx of antimony and phosphorated lime. Dr Pearson's paper, containing an account of these experiments, was read in the Royal Society at London on June 23d, 1791.

This powder is given as an alterative and sudorific in doses of about five, six, or seven grains; in which quantity it frequently produces nausea and sometimes vomiting and purging. Its principal use is in removing obstructions or suppressions of the insensible perspiration which so often produce fevers; and hence its great efficacy in putting a stop to the progress of several fevers, or in preventing them from coming on after taking cold.

SULPHUR ANTIMONII PRÆCIPITATUM.

Lond.

Precipitated sulphur of Antimony.

Take of

Antimony, powdered, two pounds;

Water of pure kali, four pints;
Distilled water, three pints.

Mix, and boil them with a slow fire for three hours, constantly stirring, and adding distilled water as it shall be wanted; strain the hot ley through a double linen cloth, and into the liquor, while yet hot, drop by degrees as much diluted vitriolic acid as is sufficient to precipitate the sulphur. Wash off the vitriolated kali with warm water.

SULPHUR ANTIMONII PRÆCIPITATUM, vulgo SULPHUR AURATUM ANTIMONII.

Edin.

Precipitated sulphur of Antimony,
commonly called *Golden sulphur*
of antimony.

Take of

Caustic ley, four pounds;

Water, three pounds;

Antimony powdered two pounds.

Boil them in a covered iron pot for three hours, adding more water if necessary, frequently stirring the mixture with an iron spatula: strain the liquor while warm through a double cloth, and add as much diluted vitriolic acid as is necessary to precipitate the sulphur, which must be well washed with plenty of water.

THE foregoing preparations are not strictly sulphurs; they contain a considerable quantity of the metallic part of the antimony, which is reducible from them by proper fluxes. These medicines must needs be liable to great variation in point of strength; and in this respect they are, perhaps, the most precarious, though some have affirmed that they are the most

cer-

certain, of the antimonial medicines.

They prove emetic when taken on an empty stomach, in a dose of four, five or six grains; but at present they are scarcely prescribed with this intention; being chiefly used as alterative deobstruents, particularly in cutaneous disorders. Their emetic quality is easily blunted, by making them up into pills with refins or extracts, and giving them on a full stomach: with these cautions, they have been taken in the quantity of sixteen grains a-day, and continued for a considerable time, without occasioning any disturbance upwards or downwards. As their strength is precarious, they should be taken at first in very small doses, and increased by degrees according to their effect.

A composition of sulphur of antimony and calomel (See *PILULÆ HYDRARGYRI MURIATÆ MITIS COMPOSITÆ*) has been found a powerful and safe alterative in cutaneous disorders; and has been productive of good effects in some obstinate venereal complaints.

ANTIMONIUM TARTARISATUM.

Lond.

Tartarised Antimony.

Take of

Crocus of antimony, powdered, one pound and an half;

Crytals of tartar, two pounds;

Distilled water, two gallons.

Boil in a glass vessel about a quarter of an hour: filter through paper, and set aside the strained liquor to crystallise.

ANTIMONIUM TARTARISATUM, vulgo TARTARUS EMETICUS.

Edin.

Tartarised antimony, commonly called Emetic Tartar.

Take of

Muriated antimony what quantity you please; pour it into warm water, in which a proper quantity of purified lixiv has been previously dissolved, that the antimonial powder may be precipitated, which after being well washed is to be dried.

Then to five pounds of water add of this powder nine drachms, and of crytals of tartar, in very fine powder, two ounces and a half; boil for a little till the powders be dissolved.

Let the strained solution be slowly evaporated in a glass vessel to a pellicle, so that crytals may be formed.

We have here two modes of making the most useful of all the antimonial preparations, long known in the shops under the name of *emetic tartar*. These modes differ considerably from each other; but in both, the antimony is united with the acid of the tartar. The process given in the London college is nearly the same with that in former editions of their Pharmacopœia, while that now adopted by the Edinburgh college is of later date. Good emetic tartar is without doubt produced by either of them; but when the precipitate from the muriatic acid is used, there is the least chance of the medicine being uncertain in point of strength: and this method comes recommended to us on the authority of Bergman, Scheele, and

and some other of the first names in chemistry. Bergman advises, that the calx be precipitated by simple water, as being least liable to variation, and this is the direction followed in the Pharmacopœia Rossica. But when the calx is precipitated by an alkaline ley, as is directed by the Edinburgh college, it is more entirely freed from the muriatic acid, and will of course be milder.

In the after part of the process, whether precipitate or crocus have been used, the quantity of the antimonial ought always to be some drachms more than is absolutely necessary for saturating the acid of the tartar, so that no crystals may shoot which are not impregnated with the antimony. After the crystals are all separated from the liquor, they ought to be rubbed together in a glass mortar into a fine powder, that the medicine may be of uniform strength.

Emetic tartar is, of all the preparations of antimony, the most certain in its operation.

It will be sufficient, in considering the medicinal effects of antimonials, that we should observe, once for all, that their emetic property depends on two different conditions of the reguline part: the first is where the reguline part is only active, by being rendered so from meeting with an acid in the stomach: the second is, where the reguline part is already joined with an acid rendering it active. It is obvious that those preparations, reducible to the first head, must always be of uncertain operation. Such then is the equal uncertainty in the chemical condition and medicinal effects of the croci, the hepate, and the calces; all of which processes are different steps or degrees of freeing the reguline

part from sulphur and calcining it. It is equally plain, that the preparations coming under the second head, must be always constant and certain in their operation. Such a one is emetic tartar, the dose and effects of which we can measure with great exactness. It is one of the best of the antimonial emetics, acting more powerfully than the quantity of crocus contained in it would do by itself, though it does not so much ruffle the constitution.

The dose of emetic tartar, when designed to produce the full effect of an emetic, is from two to four grains. It may likewise be advantageously given in much smaller doses, as a nauseating and suborific medicine.

ANTIMONIUM VITRIFICATUM.

Lond.

Vitrified Antimony.

Take of

Powdered antimony, four ounces.

Calcine it in a broad earthen vessel with a fire gradually raised, stirring it with an iron rod until it no longer emits smoke. Put this powder into a crucible, so as to fill two thirds of it. A cover being fitted on, make a fire under it, at first moderate, afterwards stronger, until the matter be melted. Pour out the melted glass.

VITRUM ANTIMONIL.

Edin.

Glass of Antimony.

Strew antimony, beat into a coarse powder like sand, upon a shallow unglazed earthen vessel, and apply a gentle heat underneath, that

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that the antimony may be heated slowly: keeping it at the same time continually stirring to prevent it from running into lumps. White vapours of a sulphureous smell will arise from it. If they cease to exhale with the degree of heat first applied, increase the fire a little, so that vapours may again arise: go on in this manner, till the powder, when brought to a red heat, exhales no more vapours. Melt this powder in a crucible with an intense heat, till it assumes the appearance of melted glass: then pour it out on a heated brass plate or dish.

THE calcination of antimony, in order to procure transparent glass, succeeds very slowly, unless the operator be wary and circumspect in the management of it. The most convenient vessel is a broad shallow dish, or a smooth flat tile, placed under a chimney. The antimony should be the purer sort, such as is usually found at the apex of the cones; this grossly powdered, is to be evenly spread over the bottom of the pan, so as not to lie above a quarter of an inch thick on any part. The fire should be at first no greater than is just sufficient to raise a fume from the antimony, which is to be now and then stirred: when the fumes begin to decay, increase the heat, taking care not to raise it so high as to melt the antimony, or run the powder into lumps: after some time the vessel may be made red-hot, and kept in this state until the matter will not, upon being stirred, any longer fume. If this part of the process be duly conducted, the antimony will appear in an uniform powder, without any lumps, and of a grey colour.

With this powder fill two-thirds of a crucible, which is to be covered with a tile, and placed in a wind-furnace. Gradually increase the fire till the calx be in perfect fusion, when it is to be now and then examined by dipping a clean iron wire into it. If the matter which adheres to the end of the wire appears smooth and equally transparent, the vitrification is completed, and the glass may be poured out upon a hot smooth stone or copper-plate, and suffered to cool slowly to prevent its cracking and flying in pieces. It is of a transparent yellowish red colour.

The glass of antimony usually met with in the shops, is said to be prepared with certain additions: which may, perhaps, render it not so fit for the purpose here designed. By the method above directed, it may be easily made of the requisite perfection without any addition.

As antimony may be rendered nearly or altogether inactive by calcination, it might be expected that the calx and glass of the present process would be likewise inert. But here the calcination is far less perfect than in the other case, when the regulus is deslagrated with nitre: there the calx is of perfect whiteness, and a glass made from that calx (with the addition of any saline flux, for of itself it will not vitrify) has little colour: but here the calx is grey, and the glass of a high colour. The calcined antimony is said by Boerhaave to be violently emetic. Experience has shewn that the glass is so much so as to be unsafe for internal use. At present it is chiefly employed in forming some other antimonial preparations, particularly the *Vitrum antimonii ceratum*. the next article to be mentioned:

tioned; and the *vinum antimonii*, afterwards to be treated of under the head of Wines. It is also frequently employed in the formation of emetic tartar; and it was directed for that purpose in a former edition of the Edinburgh pharmacopœia.

VITRUM ANTIMONII CERATUM.

Edinb.

Cerated Glass of Antimony.

Take of

Yellow wax, a drachm;

Glass of antimony, reduced into powder, an ounce.

Melt the wax in an iron vessel, and throw into it the powdered glass: keep the mixture over a gentle fire for half an hour, continually stirring it; then pour it out on paper, and when cold grind it into powder.

THE glass melts in the wax with a very gentle heat: after it has been about twenty minutes on the fire, it begins to change its colour, and in ten more comes near to that of Scottish snuff; which is a mark of its being sufficiently prepared; the quantity set down above, loses about one drachm of its weight in the process.

This medicine was for some time much esteemed in dysenteries: several instances of its good effects in these cases may be seen in the fifth volume of the Edinburgh Essays. The dose is from two or three grains to twenty, according to the age and strength of the patient. In its operation, it makes some persons sick, and vomit; it purges almost every one; though it has sometimes effected a cure without occasioning any evacuation

or sickness. It is now, however, much less used than formerly.

Mr Geoffroy gives two pretty singular preparations of glass of antimony, which seem to have some affinity with this. One is made by digesting the glass, very finely levigated, with a solution of mastich made in spirit of wine, for three or four days, now and then shaking the mixture; and at last evaporating the spirit so as to leave the mastich and glass perfectly mixed. Glass of antimony thus prepared, is said not to prove emetic, but to act merely as a cathartic, and that not of the violent kind. A preparation like this was first published by Hartman, under the name of *Chylissa*.

The other preparation is made by burning spirit of wine on the glass three or four times, the powder being every time exquisitely rubbed upon a marble. The dose of this medicine is from ten grains to twenty or thirty: it is said to operate mildly both upwards and downwards, and sometimes to prove sudorific.

CERUSSA ANTIMONII.

Brun.

Cerule of Antimony.

Take of

Regulus of antimony, one part;

Nitre, three parts.

Deflagrate them together in the manner directed for the antimony calcinatum.

THE result of this process and that formerly directed for the calcined antimony are nearly the same.

It is not necessary to use so much nitre here, as when antimony itself is employed: for the sulphur which

which the crude mineral contains, and which requires for its dissipation nearly an equal weight of nitre to the antimony, is here already separated. Two parts of nitre to one of the regulus are sufficient. It is better, however, to have an over than an under portion of nitre, lest some parts of the regulus should escape being sufficiently calcined.

KERMES MINERALE.

Succ.

Kermes Mineral.

Take of

Crude antimony, powdered, half a pound;

Fixed vegetable alkali, two pounds;

Boiling water, eight pounds.

Boil them together in an iron pot for a quarter of an hour, continually stirring the mixture with an iron spatula, and filter as speedily as possible while it is hot. The filtered liquor set in a cool place, will soon deposit a powder which must be repeatedly washed, first with cold, and afterwards with warm, water until it be perfectly insipid.

This medicine has long been greatly esteemed, especially in France, under the names of *Kermes mineral*, *Pulvis Caribæus*, *Poudre des Charteux*, &c. It was originally a preparation of Glauber, and for some time kept a great secret, till at length the French king purchased the preparation from M. de Laigerie, for a considerable sum, and communicated it to the public in the year 1720. In virtue, it is not different from the sulphurs above-mentioned; all of them owe

their efficacy to a part of the regulus of the antimony, which the alkaline salt, by the mediation of the sulphur, renders soluble in water.

Chemists are, however, divided in their opinions with respect to the precise chemical condition of the reguline part in the preparations called *Hepata antimonii*. Some have alleged that they contain not a particle of alkaline salt: It is at any rate certain, that the quantity and condition of the reguline part must vary according to the different proportions of the ingredients, the time of the precipitation, the greater or less degree of causticity of the alkali employed, and several other circumstances. At best, the whole of them are liable to the same uncertainty in their operation as the calces of antimony.

PANACEA ANTIMONII.

Panacea of Antimony.

Take of

Antimony, six ounces;

Nitre, two ounces;

Common salt, an ounce and a half;

Charcoal, an ounce.

Reduce them into a fine powder, and put the mixture into a red hot crucible, by half a spoonful at a time, continuing the fire a quarter of an hour after the last injection: then either pour the matter into a cone, or let it cool in the crucible; which when cold must be broken to get it out. In the bottom will be found a quantity of regulus; above this a compact liver-coloured substance; and on the top, a more spongy mass: this last is to be reduced

into powder, edulcorated with water, and dried, when it appears of a fine golden colour.

powder, mixed with an ounce of white sugar-candy, and made up into a mass with mucilage of gum tragacanth, may be divided into an hundred small pills; of which one, two, or three, taken at a time, are said to work gently by stool and vomit.

THIS preparation is supposed to have been the basis of *Lockyer's pills*, which were formerly a celebrated purge. Ten grains of the

C H A P. XI,

PRÆPARATA EX ARGENTO.

PREPARATIONS OF SILVER.

ARGENTUM NITRATUM. Dissolve the silver in a phial with a gentle heat, and evaporate the solution to dryness. Then

Lond.

Nitrated Silver.

Take of

Silver, one ounce ;

Dilute nitrous acid, four ounces.

Dissolve the silver in the nitrous acid, in a glass vessel with a sand heat ; then evaporate with an heat gently raised ; afterwards melt the residuum in a crucible, carefully avoiding too great a heat, and pour it into proper moulds.

ARGENTUM NITRATUM,
vulgo CAUSTICUM LUNARE.

Edin.

Nitrated Silver, commonly called

Lunar Caustic.

Take of

Purest silver, beat thin and cut in pieces, four ounces ;

Dilute nitrous acid, eight ounces ;

Distilled water, four ounces.

put the mass into a large crucible, and apply the heat, at first gently, but augment it by degrees till the mass flows like oil ; then pour it into iron moulds, previously heated, and greased with tallow. The lunar caustic must be kept in well stoppered phials.

These processes do not differ in any material particular.

Strong nitrous acid will dissolve about half its weight of pure silver ; and the diluted acid formerly described, proportionally less according to its quantity of pure nitrous acid. Sometimes this acid contains a portion of the vitriolic, or muriatic acid ; which, however minute, renders it unfit for dissolving this metal, and should therefore be carefully separated before the solution be attempted. The method which the refiners employed for examining the purity of their aquafortis (for

(for so they call a mixture of equal parts of pure nitrous acid, and water,) and purifying it if necessary, is to let fall into it a few drops of a perfect solution of silver already made: if the liquor remain clear, and grow not in the least turbid or whitish, it is fit for use; otherwise, they add a small quantity more of the solution, which immediately turns the whole of a milky white colour; the mixture being then suffered to rest for some time, deposits a white sediment; from which it is warily decanted, examined afresh, and, if need be, farther purified by a fresh addition of the solution.

The silver beat into thin plates as directed in the second of the above processes, needs not be cut in pieces: the solution will go on the more speedily, if they are only turned round into spiral circumvolutions, so as to be conveniently got into the glafs, with care that the several surfaces do not touch each other. By this management, a greater extent of the surface is exposed to the action of the menstruum, than when the plates are cut in pieces and laid above each other. It is necessary to employ very pure water; for most saline matters precipitate a part of the silver.

The crucible ought to be large enough to hold five or six times the quantity of the dry matter; for it bubbles and swells up greatly, and is consequently apt to run over. During this time, also, little drops are now and then spirited up, whose causticity is increased by their heat, against which the operator ought therefore to be on his guard. The fire must be kept moderate till this ebullition ceases, and till the mat-

ter becomes consistent in the heat that made it boil before: then quickly increase the fire till the matter flows thin at the bottom like oil, when it is to be immediately poured into the mould, without waiting till the fumes cease to appear; for when this happens, the preparation proves not only too thick to run freely into the mould, but is likewise corrosive than it ought to be.

For want of a proper iron mould, one may be formed of tobacco-pipe clay, not too moist, by making in a lump of it, with a smooth stick first greased, as many holes as there is occasion for: pour the liquid matter into these cavities, and when congealed take it out by breaking the mould. Each piece is to be wiped clean from the grease, and to keep the air from acting on them, they must be speedily put into well stoppered phials.

This preparation is a strong caustic; and is frequently employed as such, for consuming warts and other fleshy excrescences, keeping down fungous flesh in wounds or ulcers, and other similar uses. It is rarely applied where a deep eschar is required, as in the laying open of imposthumes and tumours; for the quantity necessary for these purposes, liquefying by the moisture of the skin, spreads beyond the limits within which it is intended to operate.

PILULÆ LUNARES.

The Lunar Pills.

Diffolve pure silver in aquafortis, as in the foregoing process; and after due evaporation, set the liquor to crystallise. Let the crystals

crystals be again dissolved in common water, and mixed with a solution of equal their weight of nitre. Evaporate this mixture to dryness, and continue the exsiccation with a gentle heat, keeping the matter constantly stirring till no more fumes arise.

HERE it is necessary to continue the fire till the fumes entirely cease, as more of the acid is required to be dissipated than in the preceding process. The preparation is, nevertheless, in taste very sharp, intensely bitter and nauseous: applied to ulcers, it acts as a caustic, but it is much milder than the

foregoing. Boerhaave, Boyle, and others, commend it highly in hydropic cases. The former assures us, that two grains of it made into a pill with crumb of bread and a little sugar, and taken on an empty stomach (some warm water, sweetened with honey, being drank immediately after), purge gently without griping, and bring away a large quantity of water, almost without the patient's perceiving it: that it kills worms, and cures many inveterate ulcerous disorders. He nevertheless cautions against using it too freely, or in too large a dose; and observes, that it always proves corrosive and weakening to the stomach.

CHAP.

C H A P. XII.

PRÆPARATÆ FERRO.

PREPARATIONS OF IRON.

FERRI LIMATURA PURIFICATA.

*Edin.**Purified Iron filings.*

Cover the filings with a piece of gauze, or with the bottom of a fine sieve, and through this draw the iron filings with a magnet.

This is a very effectual method of purifying iron filings from brads and other matters with which they may be accidentally mixed. The magnet, if held over the filings, is apt to attract the filings in bunches or clusters, which may entangle in them sand or other metals: but by drawing them through the gauze, they come up single, and consequently perfectly pure.

FERRI SQUAMÆ PURIFICATÆ.

*Edin.**Purified Iron Scales.*

Let Iron Scales (collected at the foot of a Blacksmith's anvil)

be purified by means of a magnet. The magnet will attract only the smaller and more pure scales, leaving the larger and more impure behind.

The gauze is useless in this case, because the scales are a calx of iron, and not so violently attracted by the magnet as the iron in its metallic state is; hence they are not liable to be drawn up in bunches as the filings are.

FERRUM-AMMONIACALE.

*Lond.**Ammoniacal Iron.*

Take of

Iron filings, one pound;

Sal ammoniac, two pounds.

Mix, and sublime. What remains at the bottom of the vessel mix by rubbing together with the sublimed matter, and again sublime.

FER.

FERRUM AMMONIATUM,
vulgo FLORES MARTI-
ALES.

Edin.

*Ammoniated Iron, commonly cal-
led martial flowers.*

Take of

Burnt vitriolated Iron washed
and well dried;

Sal ammoniac, equal weights.

Having mixed them well, sub-
lime.

THOUGH the mode of prepara-
tion directed by the two colleges
is here different, yet the prepara-
tion is fundamentally the same;
and it is perhaps difficult to say
which mode of preparation is to
be preferred as the easiest and
best.

The success of this process de-
pends principally on the fire be-
ing hastily raised, that the sal am-
moniac may not sublime before the
heat be great enough to enable it
to carry up a sufficient quantity of
the iron. Hence glass vessels are
not so proper as earthen or iron
ones; for when the former are
used, the fire cannot be raised quick-
ly enough without endangering
the breaking of them. The most
convenient vessel is an iron pot;
to which may be luted an inverted
earthen jar, having a small hole in
its bottom to suffer the elastic va-
pours, which arise during the ope-
ration, to escape. It is of advan-
tage to thoroughly mix the ingre-
dients together, moisten them
with a little water, and then gent-
ly dry them; and to repeat the
pulverisation, humectation, and
exsiccation two or three times or
often. If this method be fol-
lowed, the sal ammoniac may be

increased to three times the quan-
tity of the iron, or farther; and a
single sublimation will often be
sufficient to raise flowers of a very
deep orange colour.

This preparation is supposed to
be highly aperient and attenuating;
though no otherwise so than the
rest of the chalybeates, or at most
only by virtue of the saline matter
joined to the iron. It has been
found of service in hysterical and
hypocondriacal cases, and in dis-
tempers proceeding from a laxity
and weakness of the solids, as the
rickets. From two or three
grains to ten may be conveniently
taken in the form of a bolus: it
is nauseous in a liquid form (unless
in spirituous tincture); and oc-
casion's pills to swell and crumble,
except such as are made of the
gums.

FERRI RUBIGO.

Lond.

Rust of Iron.

Take of

Iron filings, one pound.

Expose them to the air, often
moistening them with water,
until they be corroded into rust:
then powder them in an iron
mortar, and wash off with distil-
led water the very fine pow-
der.

But the remainder, which cannot
by moderate rubbing be reduc-
ed into a powder capable of be-
ing easily washed off, must be
moistened, exposed to the air
for a longer time, and again
powdered and washed as before.
Let the washed powder be dri-
ed.

FERRI

FERRI RUBIGO, vulgo FERRI LIMATURA PREPARATA.

Edinb.

Rust of Iron, commonly called Prepared Iron filings.

Set purified Iron filings in a moist place, that they may turn to rust, which is to be ground into an impalpable powder.

THE rust of iron is preferable as a medicine to the calces, or croci, made by a strong fire. Hoffman relates, that he has frequently given it with remarkable success in obstinate chlorotic cases accompanied with excessive headachs and other violent symptoms; and that he usually joined with it pimpernella, arum root, and salt of tartar, with a little cinnamon and sugar. The dose is from four or five grains to twenty or thirty. Some have gone as far as a drachm: But all the preparations of this metal answer best in small doses, which should be rather often repeated than enlarged.

FERRUM TARTARISATUM.

London.

Tartarised Iron.

Take of

Of iron filings one pound;
Powdered crystals of tartar, two pounds.

Mix them with distilled water into a thick paste. Expose it to the air in an open earthen vessel for eight days; then dry the matter in a sand bath, and reduce it to a very fine powder.

THIS is an useful preparation of iron; in which that metal is

brought to a saline state by means of the cream of tartar. It has now for the first time a place in the London pharmacopœia; but it had before been introduced into some of the foreign ones, particularly the Pharmacopœia Genevensis, under the title of *mas tartarizatus*; and indeed it is precisely the same with the *mas solubilis* of the old editions of the Edinburgh pharmacopœia.

This very elegant and useful preparation of iron, will, in many cases, take effect where the others have failed, on account of its great solubility. It may be given in a liquid form, or in a bolus in doses of from five grains to a scruple twice or thrice a day.

FERRUM VITRIOLATUM.

London.

Vitriolated Iron.

Take of

Iron filings,

Vitriolic acid, each eight ounces;
Distilled water, three pints.

Mix them in a glass vessel; and, when the effervescence has ceased, place the mixture for some time upon hot sand; then pour off the liquor, straining it through paper; and, after due evaporation, set it aside to crystallize.

FERRUM VITRIOLATUM, vulgo SAL CHALYBIS.

Edinb.

Vitriolated Iron, commonly called Salt of Steel.

Take of

Purified iron filings, six ounces;

Vitriolic acid, eight ounces;

Water, two pounds and a half.

Mix them, and when the effervescence

cence ceases, let the mixture stand for some time upon warm sand; then strain the liquor through paper, and after due evaporation set it aside to crystallize.

DURING the dissolution of the iron an elastic vapour arises, known by the name of inflammable air, which on the approach of flame catches fire and explodes, so as sometimes to burst the vessel. To this particular therefore the operator ought to have due regard.

The chemists are seldom at the trouble of preparing this salt according to the directions above given; but in its stead substitute common green vitriol, purified by solution in water, filtration, and crystallisation. The only difference between the two is, that the common vitriol contains somewhat more metal in proportion to the acid: and hence in keeping, its green colour is much sooner defaced by a rusty brownish cast. The superfluous quantity of metal may be easily separated, by suffering the solution of the vitriol to stand for some time in a cold place, when a brownish yellow ochery sediment will fall to the bottom; or it may be perfectly dissolved, and kept suspended by a suitable addition of vitriolic acid. If the vitriol be suspected to contain any precious matter, which the common English vitriol seldom does, though most all the foreign vitriols do, the addition of some bright iron wire to the solution will both discover, and effectually separate, that metal:

for the acid quits the copper to dissolve a proportional quantity of the iron; and the copper, in its separation from the acid, adheres to the undissolved iron, and forms a skin of a true copper colour on its surface. Even a vitriol of pure copper may, on this principle, be converted into a pure vitriol of iron.

Although the vitriolic acid appears in this operation to have so much stronger a disposition to unite with iron than with copper, that it totally rejects the latter when the former is presented to it; the operator may nevertheless, give a dangerous impregnation of copper to the purest and most saturated solution of iron in the vitriolic acid, by the use of copper vessels. If the martial solution be boiled in a copper vessel, it never fails to dissolve a part of the copper, distinguishable by its giving a precious stain to a piece of bright iron immersed in it. By the addition of the iron, the copper is separated; by boiling it again without iron, more of the copper is dissolved; and this may in like manner be separated by adding more iron.

The vitriolated iron is one of the most efficacious preparations of this metal; and frequently used in cachectic and chlorotic cases, for exciting the uterine purgations, strengthening the tone of the viscera, and destroying worms. It may be conveniently taken in a liquid form, largely diluted with water: Boerhaave directs it to be dissolved in an hundred times

times its weight of water, and the solution to be taken in the dose of twelve ounces on an empty stomach, walking gently after it. Thus managed, he says, it opens the body, proves diuretic, kills and expels worms, tinges the excrements black, or forms them into a matter like clay, strengthens the fibres, and thus cures many different distempers. The quantity of vitriol in the above dose of the solution, is fifty seven grains and a half; but in common practice, such large doses of this strong chalybeate are never ventured on. Four or five grains, and in many cases half a grain, are sufficient for the intention in which chalybeate medicines are given. Very dilute solutions, as that of a grain of the salt in a pint of water, may be used as succedanea to the natural chalybeate waters, and will in many cases produce similar effects.

FERRUM VITRIOLATUM
USTUM, vulgo COLCO-
THAR VITRIOLI.
Edin.

*Burnt Vitriolated Iron, commonly
called Colcothar of Vitriol.*

Let dried vitriolated iron be urged with a violent fire till it becomes of a very red colour.

THE colcothar is very rarely employed by itself for medical purposes; but it is used in the preparation of some other chalybeates, particularly the *Ferrum ammoniatum* of the Edinburgh college.

ÆTHIOPS MARTIALIS.

*Gen.
Martial Ethiops.*

Take of

Rust of iron, as much as you please;

Olive oil, a sufficient quantity to make it into a paste.

Let this be distilled in a retort by a strong fire to dryness.

Keep the residuum reduced to a fine powder in a close vessel.

FERRUM VITRIOLATUM
EXSICCATUM, vulgo VI-
TRIOLUM CALCINA-
TUM.

Edin.

*Dried Vitriolated Iron, commonly
called Calcined vitriol.*

Take of

Vitriolated iron, as much as you please.

Let it be calcined in an unglazed earthen vessel, with a moderate heat, till it becomes white and perfectly dry.

An article under this name had formerly a place in some of the old pharmacopœias, and is described by Lemery in the Memoirs of the French Academy; but it was formed by a tedious process, continued for several months by the aid of

Chap. 12.

Here the process here obtained in a very subtle
 is much shorter, and is sup-
 posed to give nearly the
 same product. Some have re-
 commended it, on the sup-
 position that the iron is

C H A P.

PRÆPARATA EX HYDRARGYRO.

PREPARATIONS OF QUICKSILVER.

WE have already treated of quicksilver or mercury at some length in the *Materia Medica*; and have there given a view of the different mercurial preparations, in the *London* and *Edinburgh* pharmacopœias, reduced to the form of a table.

Mercury or quicksilver, in its crude state, is a ponderous metallic fluid, totally volatile in a strong fire, and calcinable by a weak one (though very difficultly) into a red powdery substance. It dissolves in the nitrous acid, is corroded by the vitriolic, but not acted on by the muriatic in its ordinary state: it nevertheless may be combined with this last skilfully applied in the form of fume. Quicksilver unites by trituration, with earthy, unctuous, resinous, and other similar substances, so as to lose its fluidity: triturated with sulphur, it forms a black mass, which by sublimation changes into a beautiful red ore.

The general virtues of the mercurial preparations we have already endeavoured to state under the

article *Hydrargyrum* in the *Materia Medica*. Here it is sufficient to observe, that while in certain circumstances they act as stimulants, and even as corrosives, on the parts to which they are applied; under a different management, when introduced into the habit, they seem to forward circulation through even the smallest and most remote vessels of the body; and may be so managed as to promote all the excretions. But while they thus operate as a powerful stimulus to the sanguiferous, and probably also to the lymphatic system, they seem to exert but little influence on the nervous system. By this means they prove eminently serviceable in some inveterate chronic disorders, proceeding from obstinate obstructions of the glands. Crude mercury does not act on the human body unless it be resolved into fumes, or divided into minute particles, and prevented from reuniting by the interposition of other substances, unless the dividing body be sulphur, which restrains its action.

Com-

Combined with a small quantity of the mineral acids, it acts effectually, though in general mildly; with a larger, it proves violently corrosive.

HYDRARGYRUS PURIFICATUS.

Lond.

Purified Quicksilver.

Take of

Quicksilver,

Iron filings, each four pounds.

Rub them together, and distil from an iron vessel.

As in the distillation of quicksilver glass retorts are very liable to be broken, an iron one is here with propriety directed: and by the addition of the iron filings, matters which might otherwise arise with the quicksilver will be more apt to be detained in the retort. But still this happens so readily, even merely with the degree of heat necessary to elevate the mercury, that it is very doubtful whether much advantage be obtained from this process; and accordingly it has no place in the pharmacopœia of the Edinburgh college.

HYDRARGYRUS ACETATUS.

Lond. Edin.

Acetated Quicksilver.

Take of

Quicksilver;

Dilute nitrous acid, of each half a pound;

Acetated vegetable alkali, three ounces;

Warm water, two pounds and an half.

Digest the quicksilver with a gentle heat in the dilute nitrous acid

for twenty four hours, or till it be dissolved. Pour the nitrated quicksilver, thus prepared, into the solution of the acetated vegetable alkali in the warm water (at about 90 degrees), so that the acetated quicksilver may be formed, which is to be washed with cold water, and afterwards dissolved in a sufficient quantity of warm water. Filter this solution, and set it aside that crystals may be formed.

THIS is a case of a double elective attraction, by which we combine quicksilver with the acetic acid, which was thought to be extremely difficult, if not impossible, till lately. The salt formed by this union is supposed to be much milder than any other saline preparation of quicksilver, and is the basis of the celebrated pill prepared and sold by Keyser. So great was the reputation of this pill, that the secret was purchased by the French King, and directions for preparing it published by authority.

The process here described is much less operose than that delivered by Mr. Keyser, and furnishes a true acetated quicksilver.

HYDRARGYRUS CALCINATUS.

Lond.

Calcined Quicksilver.

Take of

Purified quicksilver, one pound.

Expose the quicksilver, in a flat-bottomed glass cucurbit, to an heat of about 600 degrees, in a sand-bath, till it becomes a red powder.

THIS preparation, as thus ordered, is a very tedious one, requiring

quiring several months to complete it in. As the free access of fresh air promotes the calcination, the quicksilver ought to be exposed to the heat in a broad shallow vessel and not in a cucurbit. To this, objections have however been made, saying, that, if the heat be accidentally raised too high, part of the quicksilver would evaporate, which, when a cucurbit is used, being condensed in the neck of the vessel, falls down again into the cucurbit.

This preparation is highly esteemed in venereal cases, and supposed to be the most efficacious and certain of all the mercurials. It may be advantageously given in conjunction with opiates: a bolus or pill, containing from half a grain to two grains of this calx, and a quarter, half a grain, or more, of opium, with the addition of some warm aromatic ingredient, may be taken every night. Thus managed, it acts mildly, though powerfully, as an alterative and diaphoretic; given by itself in larger doses, as four or five grains, it proves a rough emetic and cathartic.

HYDRARGYRUS PRÆCIPITATUS CINEREUS, vulgo PULVIS MERCURII CINEREUS.

Edinb.

Ash coloured precipitate of quicksilver, commonly called Ash-coloured powder of mercury.

Take of

Quicksilver,

Dilute nitrous acid, equal weights.

Mix them so as to dissolve the quicksilver; dilute the solution with pure water, and add water of ammonia as much as is suffi-

cient to separate the mercury perfectly from the acid: then wash the powder with pure water, and dry it.

In this process the nitrated quicksilver is decomposed; the precipitate, therefore, is a calx of mercury, and the clear liquor a solution of nitrous ammoniac. There are several niceties to be observed in conducting this process. If we employ too small a proportion of acid, and assist the solution by heat, the solution will contain an excess of calx capable of being separated by the water; and the whole precipitate from such a solution would be of a white colour. If, on the other hand, we employ too large a proportion of acid, the mercury is then so far calcined as to be capable of being dissolved by the volatile alkali: and this might happen in proportion as the quantity should be superabundant to the neutralisation of the acid. The use of the water is to dissolve the nitrous ammoniac as fast as it is formed, and thereby prevent it from falling down and mixing with the precipitate. It is necessary to employ the purest water.

The *Pulvis mercurii cinereus* has of late years been much celebrated for the cure of venereal affections. From the testimony of Dr Home, and several other practitioners, it is doubtless a very valuable preparation of mercury. It may be given in a bolus in the quantity of from one to fix or seven grains: the dose being gradually increased according to its effects.

HYDRAR-

HYDRARGYRUS CUM CRETA.

London.
Quicksilver and chalk.

Take of
Purified quicksilver, three ounces;
Powdered chalk, five ounces.
Rub them together until the globules disappear.

This preparation had no place in the former editions of the London pharmacopœia. A preparation, nearly similar indeed, under the title of *Mercurius Alkalifatus*, in which crabs eyes were employed instead of chalk, had a place in the old editions of the Edinburgh pharmacopœia, but was rejected from the edition of 1744, and has never again been restored. One reason for rejecting it was its being liable to gross abuse in the preparation, by the addition of some intermediate, facilitating the union of mercury with the absorbent earth, but diminishing or altering its power. The present preparation is liable to the same objection. Some, however, are of opinion, that when duly prepared, it is an useful alterative. But there can be little doubt, that the absorbent earth, by destroying acid in the alimentary canal, will diminish the activity of the mercury.

HYDRARGYRUS MURIAT- TUS.

London.
Muriated Quicksilver.

Take of
Purified quicksilver, two pounds;
Vitriolic acid, thirty ounces;
Dried sea-salt, four pounds.
Mix the quicksilver with the acid, in a glass vessel, and boil

in a sand-heat until the matter be dried. Mix it when cold, with the sea-salt, in a glass vessel; then sublime in a glass cucurbit, with a heat gradually raised. Lastly, let the sublimed matter be separated from the scorize.

HYDRARGYRUS MURIA- TUS CORROSIVUS, vulgo MERCURIUS SUBLIMA- TUS CORROSIVUS.

Edin.

Muriated corrosive quicksilver, commonly called Sublimate corrosive Mercury.

Take of
Quicksilver,
Dilute nitrous acid, of each four ounces;
Dry sea-salt;
Dried vitriolated iron, of each five ounces.

Dissolve the quicksilver in the nitrous acid, and evaporate the solution to a white and thoroughly dry mass; then add the sea-salt and vitriolated iron. Having ground and mixed them well together, put the whole into a phial, one half of which they ought to fill; then sublime in sand, first with a gentle, but afterwards with an increased heat.

The sublimate prepared by either of these methods is the same: they both consist only of quicksilver and the acid of the sea-salt united together, the other ingredients being of no further use in this process, than as convenient and proper intermediaries for facilitating the union of the quicksilver with the muriatic acid.

Our apothecaries rarely, and few even of the chemists, attempt the making of this preparation them-

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themselves; greatest part of what is used among us comes from Venice and Holland. This foreign sublimate has been reported to be adulterated with arsenic. Several chemists have denied the possibility of this union, saying that arsenic, and corrosive sublimate will not arise together in sublimation. This may be true or not, but surely the sublimate may be mixed with arsenic after the sublimation. Various methods have been given for detecting this adulteration; none of them however are to be depended on, except the following. Let some of the sublimate, powdered in a glass mortar, be well mixed with twice its weight of black flux, and a little filings or shavings of iron; put the mixture into a crucible capable of holding four or five times as much; give a gradual fire till the ebullition ceases, and then hastily increase it to a white heat. If no fumes of a garlic smell can be perceived during the process, and if the particles of iron retain their form without any of them having been melted, we may be sure that the mixture contains no arsenic.

Sublimate is a most violent corrosive, soon corrupting and destroying all the parts of the body it touches. A solution of about a drachm of it in a quart of water is used for keeping down proud flesh, and cleansing foul ulcers; and a more dilute solution as a cosmetic, and for destroying cutaneous insects. But a great deal of caution is requisite even in these external uses of it.

Some have nevertheless ventured to give a tenth or an eighth of a grain of it internally. Boerhaave relates, that if a grain of it be dissolved in an ounce or more of water, and a drachm of this solution, sweetened

with syrup of violets, be taken twice or thrice a-day, it will prove efficacious in many distempers thought incurable; but he particularly cautions us not to venture upon it, unless the method of managing it be well known.

Sublimate, dissolved in vinous spirit, has been given internally in larger doses; from a quarter of a grain to half a grain. This method of using it was brought into repute by Baron Van Swieten at Vienna, especially for venereal maladies; and several trials of it have also been made in this kingdom with success. Eight grains of the sublimate are dissolved in fifteen ounces of rectified spirit of wine or proof spirit; the rectified spirit dissolves it more perfectly, and seems to make the medicine milder in its operation than the proof spirit of the original prescription of Van Swieten. Of this solution, from one or two spoonfuls, that is, from half an ounce to an ounce, are given twice a day, and continued till all the symptoms are removed; observing to use a low diet, with plentiful dilution, otherwise the sublimate is apt to purge, and gripe severely. It generally purges more or less at the beginning, but afterwards seems to operate chiefly by urine and perspiration.

CALOMELAS.

Lond.

Calomel.

Take of

Muriated quicksilver, one pound:
Purified quicksilver, nine ounces.

Rub them together till the globules disappear, and then sublime the mass. In the same manner repeat the sublimation four times. Afterwards rub the matter into

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a very fine powder. and wash it
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HYDRARGYRUS MURIA-
TUS MISTIS, vulgo CALO-
MELAS, five MERCURIUS
DULCIS.

Edin.

Mill Muriated Quicksilver, com-
monly called Calomel, or Sweet
Mercury.

Take of

Muriated corrosive quicksilver,
reduced to a powder in a glass
mortar, four ounces;

Pure quicksilver, three ounces
and a half.

Mix them well together, by long
trituration in a glass or marble
mortar, until the quicksilver
ceases to appear. Put the
powder into an oblong phial,
of such a size, that only one-
third of it may be filled; and
set the glass in sand, that the
mass may sublime. After the
sublimation break the glass,
and the red powder which is
found in its bottom; with the
whitish one that sticks about
the neck, being thrown away,
let the remaining mass be sub-
limed again three or four times,
and reduced to a very fine
powder.

THE trituration of corrosive
sublimate with quicksilver is a
very noxious operation: for it
is almost impossible, by any care,
to prevent the lighter particles
from rising so as to affect the
operator's eyes and mouth: It
is nevertheless of the utmost
consequence, that the ingredi-
ents be perfectly united before
the sublimation is begun. It is
necessary to pulverise the sub-

limate before the mercury is
added to it; but this may be
safely performed, with a little
caution; especially if during the
pulverisation the matter be now
and then sprinkled with a little
spirit of wine: this addition does
not at all impede the union of
the ingredients, or prejudice the
sublimation: it will be convenient
not to close the top of the sub-
liming vessel with a cap of paper
at first (as is usually practised)
but to defer this till the mixture
begins to sublime, that the spirit
may escape.

The rationale of this process
deserves particular attention; and
the more so, as a mistaken theory
herein has been productive of se-
veral errors with regard to the
operation of mercurials in gene-
ral. It is supposed, that the
dissulfication, as it is called, of the
mercurius corrosivus, is owing to
the spiculæ or sharp points, on
which its corrosiveness depends,
being broken and worn off by the
frequent sublimations. If this
opinion were just, the corrosive
would become mild, without any
addition, barely by repeating the
sublimation; but this is contrary
to all experience. The abate-
ment of the corrosive quality of
the sublimate is entirely owing to
the combination of as much fresh
mercury as is capable of being
united with it; and by whatever
means this combination be effec-
ted, the preparation will be suf-
ficiently dulcified. Friture and
digestion promote the union of
the two, while sublimation tends
rather to disunite them. The
prudent operator, therefore, will
not be solicitous about separating
such mercurial globules as appear
distinct after the first sublimation:
he will endeavour rather to con-
bine

bine them with the rest. by repeating the triture and digestion.

The college of Wirtemberg require their *mercurius dulcis* to be only twice sublimed; and the Augustin, but once; and Neumann proposes making it directly by a single sublimation, from the ingredients of the corrosive sublimate, by only taking the quicksilver in a larger proportion.

If the medicine made after either of these methods, should prove in any degree acrid, water boiled on it for some time will dissolve and separate that part in which its acrimony consists. The marks of the preparation being sufficiently dulcified are its being perfectly insipid to the taste, and indissoluble by long boiling in water. Whether the water, in which it has been boiled, has taken up any part of it, may be known by dropping into the liquor a ley of any alkaline salt: if the decoction has any mercurial impregnation, it will grow turbid on this addition; if otherwise, it will continue limpid. But here care must be taken not to be deceived by any extraneous saline matter in the water itself: most of the common spring waters turn milky on the addition of alkalies, and therefore, for experiments of this kind, distilled water or rain water ought to be used.

This name of *Calomel*, though for a considerable time banished from our best pharmacopœias, is again restored by the London college.

Calomel, or *mercurius dulcis*, may be considered as one of the most useful of the mercurial preparations; and it may be

estimated as holding an intermediate place between the *hydrargyrus acetatus*, or the mildest of the saline preparations, and the *hydrargyrus muriatus*, or corrosive sublimate, one of the most acrid of them.

HYDRARGYRUS MURIATUS MITIS.

Lond.

Mild muriated Quicksilver.

Take of

Purified quicksilver,

Dilute nitrous acid, of each half a pound.

Mix in a glass vessel, and set it aside until the quicksilver be dissolved. Let them boil, that the salt may be dissolved. Pour out the boiling liquor into a glass vessel, containing a boiling hot solution of four ounces of sea-salt in eight pints of water.

After a white powder has subsided to the bottom of the vessel, let the liquor swimming at the top be poured off, and the remaining powder be washed till it becomes insipid, with frequent affusions of hot water; then dried on blotting paper with a gentle heat.

HYDRARGYRUS MURIATUS PRECIPITATUS.

Edin.

Precipitated muriated Quicksilver.

Take of

Dilute nitrous acid, eight ounces;

Quicksilver, eight ounces or a little more.

Pour them into a chemical phial loosely covered, and let them stand for an hour, avoiding the vapours. Afterwards place the phial

phial in a sand bath for four hours, gradually increasing the heat till the mixture boils for about a quarter of an hour, frequently shaking the vessel occasionally. If the quicksilver be all dissolved it will be necessary to add more, that the solution may be a perfectly saturated one. This solution must be poured boiling hot into another vessel, containing a boiling hot solution of four ounces and an half of sea salt in eight pounds of water. The mixture must be performed quickly, and with a brisk agitation of the vessel in which it is made. When the precipitate has subsided, pour off the liquor, and wash the precipitate well by frequent additions of boiling water and subsequent decantations, until no saline taste is perceptible.

This preparation had a place in former editions of the London and Edinburgh pharmacopœias, under the name of *Mercurius dulcis precipitatus*; but the process as now given is somewhat altered, being that of Mr Scheele of Sweden, who has recommended this as an easy and expeditious method of preparing sweet mercury or calomel.

It appears from several tests, that this precipitate is equal in every respect to that prepared by the preceding processes: it is less troublesome and expensive, and the operator is not exposed to the noxious dust arising from the triture of the quicksilver with the corrosive sublimata, which necessarily happens by the common method. The powder is also finer than can be made from

the common sublimed sweet mercury by any trituration whatever. The clear liquor standing over the precipitate, is a solution of cubic or rhomboidal nitre.

Mercurius dulcis, which may be considered as precisely the same with the *calomelas* and *hydrargyrus muriatus mitis*, appears to be one of the best and safest preparations of this mineral, when intended to act as a quick and general stimulant. Many of the more elaborate processes are no other than attempts to produce from mercury such a medicine as this really is. The dose, recommended by some for raising a salivation, is ten or fifteen grains taken in the form of a bolus or pills, every night or oftener, till the pyralism begins. As an alterant and diaphoretic, it has been given in doses of five or six grains; a purgative being occasionally interposed, to prevent its affecting the mouth. It answers, however, much better when given in smaller quantities, as one, two, or three grains every morning and evening, in conjunction with such substances as determine its action to the skin, as the extract or resin of guaiacum; the patient at the same time keeping warm, and drinking liberally of warm, diluent liquors. By this method of managing it, obtinate cutaneous and venereal disempers have been successfully cured, without any remarkable increase of the sensible evacuations. It is sometimes, however, difficult to measure its effects in this way; and it is so very apt to run off by the intestines, that we can seldom administer it in such a manner as to produce those per-

permanent effects which are often required, and which we are able to do by other preparations. It has been lately proposed to rub the gums and inside of the mouth with this preparation, as a ready and effectual method of producing salivation: this practice has been particularly recommended in the internal hydrocephalus, where it is exceedingly difficult to excite a salivation by other means; but its advantages are not fully confirmed by experience: and the good effects of mercury in hydrocephalus, are rather to be attributed to the mercury, having been introduced into the system in an active state, and thus promoting absorption, than to the discharge by salivation.

HYDRARGYRUS NITRATUS RUBER.

Lond.

Red nitrated Quicksilver.

Take of

Purified quicksilver,

Nitrous acid, of each one pound;

Muriatic acid, one drachm.

Mix in a glass vessel, and dissolve the quicksilver in a sand-bath; then raise the fire until the matter be formed into red crystals.

HYDRARGYRUS NITRATUS RUBER, vulgo MERCURIUS PRÆCIPITATUS RUBER.

Edin.

Red nitrated Quicksilver, commonly called Red precipitated Mercury.

Take of
Quicksilver,

Dilute nitrous acid, of each one pound.

Let the quicksilver be dissolved in the acid, and then let the solution be evaporated to a white dry mass. This being beat into a powder, must be put into a glass cucurbit, and subjected to a fire gradually increased, continually stirring the mass with a glass rod, that it may be equally heated, till a small quantity of it taken out in a glass spoon and allowed to cool, assumes the form of shining red squame; when the vessel is to be removed from the fire.

THE muriatic acid in the menstruum, ordered in the first process, disposes the mercurial calx to assume the bright sparkling look admired in it; which, though perhaps no advantage to it as a medicine, ought nevertheless to be insisted on by the buyer as a mark of its goodness and strength. As soon as the matter has gained this appearance, it should be immediately removed from the fire, otherwise it will soon lose it again.

This precipitate is an escharotic, and with this intention it is frequently employed by the surgeons, for consuming fungous flesh in ulcers, and the like purposes. It is subject to great uncertainty in point of strength; more or less of the acid exhaling, according to the degree and continuance of the fire. The best criterion of its strength, as already observed, is its brilliant appearance; which is also the mark of its genuineness: if mixed with minimum, which it is sometimes

laid

said to be, the duller hue will discover the abuse. This admixture may be more certainly detected by means of fire: the mercurial part will totally evaporate, leaving the minium behind.

Some have ventured to give this medicine internally, in venereal, scrophulous, and other obinate chronic disorders, in doses of two or three grains, or more. But certainly the milder mercurials, properly managed, are capable of answering all that can be expected from this; without occasioning violent anxieties, tormina of the bowels, and similar ill consequences, which the best management can scarcely prevent this corrosive preparation from sometimes inducing. The chemists have contrived many methods of correcting and rendering it milder, by divesting it of a portion of the acid; but to no very good purpose, as they either leave the medicine still too corrosive, or render it similar to others which are procurable at an easier rate.

CALX HYDRARGYRI ALBA.

Lond.

White Calx of Quicksilver.

Take of

Muriated quicksilver,

Sal ammoniac,

Water of kali, each half a pound. Dissolve first the sal ammoniac, afterwards the muriated quicksilver in distilled water, and add the water of kali. Wash the precipitated powder until it becomes insipid.

This preparation is used chiefly in ointments: for which in-

tention, its fine white colour is no small recommendation.

HYDRARGYRUSCUMSULPHURE.

Lond.

Quicksilver with Sulphur.

Take of

Purified quicksilver,

Flowers of sulphur, each one pound.

Rub them together until the globules disappear.

HYDRARGYRUS SULPHURATUS NIGER, vulgo ÆTHIOPS MINERALIS.

Edinb.

Black sulphurated Quicksilver, commonly called Ethiops Mineral.

Take of

Quicksilver,

Flowers of sulphur, each equal weights.

Grind them together in a glass or stone mortar, with a glass pettle, till the mercurial globules totally disappear.

An Ethiops is made also with a double quantity of mercury.

The union of the mercury and sulphur might be much facilitated by the assistance of a little warmth. Some are accustomed to make this preparation in a very expeditious manner, by melting the sulphur in an iron ladle, then adding the quicksilver, and stirring them together till the mixture be completed. The small degree of heat here sufficient, cannot reasonably be supposed to do any injury to substances which have already undergone much greater fires, not only in the extraction from their ores, but likewise in the purifications of them directed in the pharmacopœia.

macopœia. In the following process, they are exposed in conjunction to a strong fire, without suspension of the compound receiving any ill quality from it. Thus much is certain, that the ingredients are more perfectly united by heat than by the degree of triture usually bestowed on them. From the ethiops prepared by triture, part of the mercury is apt to be squeezed out on making it into an electuary or pills; from that made by fire, no separation is observed to happen.

Ethiops mineral is one of the most inactive of the mercurial preparations. Some practitioners, however, have represented it as possessing extraordinary virtues; and most people imagine it a medicine of some efficacy. But what benefit is to be expected from it in the common doses of eight or ten grains, or a scruple, may be judged from hence, that it has been taken in doses of several drachms, and continued for a considerable time, without producing any remarkable effect. Sulphur eminently abates the power of all the more active minerals, and seems to be at the same time restrained by them from operating in the body itself. Boerhaave, who was in general sufficiently liberal in the commendation of medicines, disapproves of the ethiops in very strong terms. The ethiops, with a double proportion of mercury now received into our pharmacopœias, has a greater chance for operating as a mercurial, and probably the quantity of mercury might be still further increased to advantage.

HYDRARGYRUS SULPHURATUS RUBER.

Lond.

Red sulphurated Quicksilver.

Take of

Quicksilver purified, forty ounces;

Sulphur, eight ounces.

Mix the quicksilver with the melted sulphur; and if the mixture takes fire, extinguish it by covering the vessel; afterwards reduce the mass to powder and sublime it.

THIS *Hydrargyrus sulphuratus ruber* is the cinnabar of the former pharmacopœias.

It has been customary to order a larger quantity of sulphur than here directed; but smaller proportions answer better: for the less sulphur, the finer coloured is the cinnabar.

As soon as the mercury and sulphur begin to unite, a considerable explosion frequently happens, and the mixture is very apt to take fire, especially if the process be somewhat hastily conducted. This accident the operator will have previous notice of, from the matter swelling up, and growing suddenly consistent: as soon as this happens, the vessel must be immediately close covered.

During the sublimation, care must be had that the matter rise not into the neck of the vessel, so as to block up and burst the glass: to prevent this a wide necked bolt head, or rather an oval earthen jar, coated, should be chosen for the subliming vessel. If the former be employed, it will be convenient to introduce at times an iron wire, somewhat heated, in order to be the better assured that the passage is not blocking up; the danger

danger of which may be prevented by cautiously raising the vessel higher from the fire.

If the ingredients were pure, no feces will remain: in such cases, the sublimation may be known to be over, by introducing a wire as before, and feeling the bottom of the vessel, which will then be perfectly smooth: if any roughness or inequalities are perceived, either the mixture was impure, or the sublimation is not completed: if the latter be the case, the wire will soon be covered over with the rising cinnabar.

The preparers of cinnabar in large quantity, employ earthen jars, which in shape pretty much resemble an egg. These are of different sizes, according to the quantity intended to be made at one sublimation, which sometimes amounts to two hundred weight. The jar is usually coated from the small end almost to the middle, to prevent its breaking by the violence or irregularity of the fire. The greater part, which is placed uppermost, not being received within the furnace, has no occasion for this defence. The whole secret with regard to this process, is the management of the fire, which should be so strong as to keep the matter continually subliming to the upper part of the jar, without coming out at its mouth, which is covered with an iron plate; care should also be taken to put into the subliming vessel only small quantities of the mixture at a time.

The principal use of cinnabar is as a pigment. It was formerly held in great esteem as a medicine in cutaneous foulnesses, gouty and rheumatic pains, epileptic cases, &c. but of late it has lost much of its reputation. It appears to

be nearly similar to the ethiops already spoken of. Cartheuser relates, that having given cinnabar in large quantities to a dog, it produced no sensible effect, but was partly voided along with the feces unaltered, and partly found entire in the stomach and intestines on opening the animal. The celebrated Frederick Hoffman, after bestowing high encomiums on this preparation, as having, in many instances within his own knowledge, perfectly cured epilepsies and vertiges from contusions of the head (where it is probable, however, that the cure did not so much depend on the cinnabar as on the spontaneous recovery of the parts from the external injury) observes, that the large repeated doses, necessary for having any effect, can be borne only where the first passages are strong; and that if the fibres of the stomach and intestines are lax and flaccid, the cinnabar, accumulated and concreting with the mucous matter of the parts, occasions great oppression; which seems to be an acknowledgement that the cinnabar is not subdued by the powers of digestion, and has no proper medicinal activity. There are indeed some instances of the daily use of cinnabar having brought on a salivation; perhaps from the cinnabar used in those cases having contained a less proportion of sulphur than the sort commonly met with. The regulus of antimony, and even white arsenic, when combined with a certain quantity of common sulphur, seem to have their deleterious power diminished: on separating more and more of the sulphur, they exert more and more of their proper virulence. It does not seem unreasonable to presume, that mercury

cury may have its activity varied in the same manner; that when perfectly fatiated with sulphur, it may be inert, and that when the quantity of sulphur, is more and more lessened, the compound may have greater and greater degrees of the proper efficacy of mercurials.

Cinnabar is sometimes used in fumigations against venereal ulcers in the nose, mouth, and throat. Half a drachm of it burnt, and the fume being taken in with the breath, has occasioned a violent salivation. This effect is by no means owing to the medicine as cinnabar: when set on fire, it is no longer a mixture of mercury and sulphur; but mercury resolved into fume, and blended in part with the volatile vitriolic acid, in either of which circumstances this mineral, as we have already observed, has very powerful effects.

HYDRARGYRUS VITRIOLATUS.

*Lond.
Vitriolated Quicksilver.*

Take of .

Purified quicksilver, one pound;
Vitriolic acid, fifteen ounces.

Mix in a glass vessel, and heat them by degrees, until they unite into a white mass, which is to be perfectly dried with a strong fire. This matter, on the affusion of a large quantity of hot distilled water, immediately becomes yellow, and falls to powder. Rub the powder carefully with this water in a glass mortar. After the powder has subsided, pour off the water; and, adding more distilled water several times, wash the matter till it becomes insipid.

HYDRARGYRUS VITRIOLATUS FLAVUS, ^{vulgo} TURPETHUM MINERAL. L.E.

Etiob.

Yellow vitriolated Quicksilver, commonly called Turbith mineral.

Take of

Quicksilver, four ounces;

Vitriolic acid, eight ounces.

Cautiously mix them together, and distil in a retort, placed in a sand-furnace, to dryness; the white calx, which is left at the bottom, being ground to powder, must be thrown into warm water. It immediately assumes a yellow colour, but must afterwards be purified by repeated ablutions.

THE quantity of vitriolic acid formerly directed, was double to that now employed by the Edinburgh college. The reduction made in this article greatly facilitates the process; and the proportions of the London college are perhaps preferable.

Boerhaave directs this preparation to be made in an open glass, slowly heated, and then placed immediately on burning coals: care being taken to avoid the fumes, which are extremely noxious. This method will succeed very well with a little address when the ingredients are in small quantity: but where the mixture is large, it is better to use a retort, placed in a sand-furnace, with a recipient luted to it, containing a small quantity of water. Great care should be taken, when the vitriolic acid begins to bubble, that the heat be steadily kept up, without at all increasing it till the ebullition ceases, when the fire should be augmented to the utmost degree.

get, that as much as possible of the redundant acid may be expelled.

If the matter be but barely excited, it proves a caustic salt, which in the ablution with water will almost all dissolve, leaving only a little quantity of turbith: the more of the acid that has been dissipated, the less of the remaining mercury will dissolve, and consequently the yield of turbith will be greater: fire expelling only such part of the acid as is not completely fatiated with mercury, while water takes up, always, along with the acid, a proportional quantity of the mercury itself. Even when the matter has been strongly calcined, a part will still be soluble: this evidently appears on pouring into the washings a little solution of fixt alkaline salt, which will throw down a considerable quantity of yellow precipitate, greatly resembling the turbith, except that it is less violent in operation.

From this experiment it appears, that the best method of edulcorating this powder is, by impregnating the water, intended to be used in its ablution, with a determined proportion of fixt alkaline salt: for by this means, the washed turbith will not only turn out greater in quantity, but, what is of more consequence, will have an equal degree of strength; a circumstance which deserves particularly to be considered, especially in making such preparations as from an error in the process, may prove too violently corrosive to be used with any tolerable degree of safety. It is necessary to employ warm water if we are anxious for a fine colour. If cold water be used, the precipitate will be white.

3 F

It is observable, that though the superfluous acid be here absorbed from the mercury by the alkaline salt; yet in some circumstances this acid forsakes that salt to unite with mercury. If *Tartarus vitriolatus*, or *Kali vitriolatum*, as it is now called, which is a combination of vitriolic acid with fixt alkali, be dissolved in water, and the solution added to a solution of mercury in aquafortis, the vitriolic acid will unite with the mercury, and form with it a turbith, which falls to the bottom.

Turbith mineral is a strong emetic, and with this intention operates the most powerfully of all the mercurials that can be safely given internally. Its action, however, is not confined to the primæ viæ; it will sometimes excite a salivation, if a purgative be not taken soon after it. This medicine is used chiefly in virulent gonorrhœas, and other venereal cases, where there is a great flux of humours to the parts. Its chief use at present is in swellings of the testicle from a venereal affection; and it seems not only to act as a mercurial, but also, by the severe vomiting it occasions, to perform the office of a discutient, by accelerating the motion of the blood in the parts affected. It is said likewise to have been employed with success, in robust constitutions, against leprous disorders, and obdurate glandular obstructions: the dose is from two grains to six or eight. It may be given in doses of a grain or two as an alterative and diaphoretic, in the same manner as the *Hydragyrus calcinatus* already spoken of. Dr Hope has found that the turbith mineral is the most

most

most convenient errhine he has had occasion to employ.

This medicine was lately recommended as the most effectual preservative against the hydrophobia. It has been alleged there are several examples of its preventing madness in dogs which had been bitten; and some of its performing a cure after the madness was begun. From six or seven grains to a scruple may be given every day, or every second day, for a little time, and repeated at the two or three succeeding fulls and changes of the moon. Some few trials have likewise been made on human subjects bitten by mad dogs; and in these also the turbit, used either as an emetic or alterative, seemed to have good effects.

The washings of turbit mineral are used by some, externally, for the cure of the itch and other cutaneous foulnesses. In some cases mercurial lotions may be proper, but they are always to be used with great caution; this is by no means an eligible one, as being extremely unequal in point of strength; more or less of the mercury being dissolved, as has been observed above, according to the degree of calcination. The Pharmacopœia of Paris directs a mercurial wash free from this inconvenience, under the title of

Aqua mercurialis or *Mercurius liquidus*. It is composed of one ounce of mercury, dissolved in a sufficient quantity of spirit of nitre, and diluted with thirty ounces of distilled water. In want of distilled water, rain water may be used; but of spring waters there are very few which will mix with the mercurial solution, without growing turbid and precipitating part of the mercury.

SOLUTIO MERCURIALIS SIMPLEX

*Jo. Jac. Plenck.
Simple mercurial solution.*

Take of

Purest quicksilver, one drachm;
Gum arabic, two drachms.

Rub them in a stone mortar, adding by little and little distilled water of fumitory, till the mercury thoroughly disappear in the mucilage.

Having beat and mixed them thoroughly, add by degrees, and at the same time rubbing the whole together,

Syrup of kermes, half an ounce;

Distilled water of fumitory, eight ounces.

THIS mixture was much celebrated by its author as an effectual preparation of mercury, untended with the inconvenience of producing a salivation; and he imagined that this depended on a peculiar affinity existing between mercury and mucilage. Hence such a conjunction, the hydrargyrum gummosum, as it has been styled, has been the foundation of mixtures, pills, syrups, and several other formulae, that were used in extemporaneous prescription or inserted in different pharmacopœias.

By a long continued triture, mercury seems to undergo a degree of calcination; at least its globular appearance is not to be discerned by the best microscope; its colour is converted into that of a greyish powder; and from the inactive substance in its globular form, it is now become one of the most powerful preparations of this metallic body. The use of the gum seems to be nothing more,

more, than to afford the interposition of a viscid substance to keep the particles at a distance from each other, till the triture requisite to produce this change be performed. Dr Saunders has clearly proved, that no real solution takes place in this process, and that though a quantity of mercurial particles are still retained in the mixture after the globular parts have been deposited by dilution with water, yet that this suspended mercurial matter is only diffused in the liquor, and capable of being perfectly separated by filtration. That long triture is capable of effecting the above change on mercury, is fully evinced from the well known experiment of Dr Boerhaave, in producing a kind of calcined mercury by exposing quicksilver inclosed in a phial to the agitation produced by keeping the phial tied to the sails of a windmill for fourteen years. By inclosing a pound of quicksilver in an iron box, with a quantity of iron nails and a small quantity of water, by the addition of which a greater degree of intestine motion is given to the particles of the mercury, and fixing the box to the wheel of a carriage, Dr Saunders obtained, during a journey of four hundred miles, two ounces of a greyish powder, or calx of mercury.

On the above accounts we are not to ascribe the effects of Plenck's solution to an intimate division of the globules of mercury, nor to any affinity, nor elec-

tive attraction, between gum arabic and mercury; which last Mr Plenck has very unphilosophically supposed. The same thing can be done by means of gum tragacanth, by honey, and by many balsams. It is evidently owing to the conversion of the quicksilver to a calciform nature; but as this will be accomplished more or less completely, according to the different circumstances during the triture, it is certainly preferable, instead of Plenck's solution, to diffuse in mucilage, or other viscid matters, a determinate quantity of the *Pulvis cinereus*, or other calx of mercury.

It is proper to take notice, that there is in many instances a real advantage in employing mucilaginous matters along with mercurials, these being found to prevent diarrhoea and salivation to a remarkable degree. So far, then, Mr Plenck's solution is a good preparation of mercury, though his chemical rationale is perhaps erroneous. The distilled water and syrup are of no consequence to the preparation, either as facilitating the process, or for medicinal use.

It is always most expeditious to triturate the mercury with the gum in the state of mucilage. Dr Saunders found that the addition of honey was an excellent auxiliary; and the mucilage of gum tragacanth seems better suited for this purpose than gum arabic.

C H A P.

C H A P. XIV.

PRÆPARATA E PLUMBO.

PREPARATIONS OF LEAD.

LEAD readily melts in the fire, and calcines into a dusky powder: which, if the flame is reverberated on it, becomes at first yellow, then red, and at length melts into a vitreous mass. This metal dissolves easily in the nitrous acid, difficultly in the vitriolic, and in small quantity in the vegetable acids; it is also soluble in expressed oil, especially when calcined.

Lead and its calces, while undissolved, have no considerable effects as medicines. Dissolved in oils, they are supposed to be (when externally applied) anti-inflammatory and desiccative. Combined with vegetable acids, they are remarkably so; and taken internally prove a powerful though dangerous styptic.

There are two preparations of lead, *red* and *white lead*, as they are commonly called, which are much more extensively employed in other arts than in medicine, and of course they are prepared in large quantities. These formerly stood among the preparations in our pharmacopœias. But they are now

referred to the materia medica. Accordingly we have already had occasion to make some observations with respect to them. But we shall here insert from the old editions of the Edinburgh pharmacopœia, the directions there given for preparing them.

MINIUM.

Red Lead.

Let any quantity of lead be melted in an unglazed earthen vessel, and kept stirring with an iron spatula till it falls into a powder, at first blackish, afterwards yellow, and at length of a deep red colour, in which last state it is called *minium*; taking care not to raise the fire so high as to run the calx into a vitreous mass.

THE preparation of red lead is so troublesome and tedious, as scarce ever to be attempted by the apothecary or chemist; nor indeed is this commodity expected to be made by them, the preparation of it being a distinct branch of business.

business. The makers melt large quantities of lead at once, upon the bottom of the reverberatory furnace built for this purpose, and so contrived, that the flame acts on a large surface of the metal, which is continually changed by means of iron rakes drawn backwards and forwards, till the fluidity of the lead is destroyed; after which, the calx is only now and then turned. By barely stirring the calx, as above directed, in a vessel over the fire, it acquires no redness; the reverberation of flame on the surface being absolutely necessary for this effect. It is said, that 100 pounds of lead gain, in this process, 12 pounds: and that the calx being reduced into lead again, is found one pound less than the original weight of the metal.

These calces are employed in external applications, for abating inflammations, cleansing and healing ulcers, and the like.

CERUSSA.

Cerusse, or white lead.

Put some vinegar into the bottom of an earthen vessel, and suspend over the vinegar very thin plates of lead, in such a manner that the vapour which arises from the acid may circulate about the plates. Set the containing vessel in the heat of horse-dung for three weeks; if at the end of this time the plates be not properly calcined, scrape off the white powder, and expose them again to the steam of vinegar, till all the lead be thus corroded into powder.

THE making of white lead is also become a trade by itself, and

confined to a few persons, who have large conveniences for this purpose.

In this preparation, the lead is so far opened by the acid, as to discover, when taken internally, the malignant quality of the metal; and to prove externally, when sprinkled on running sores, or ulcers, moderately cooling, drying and astringent.

CERUSSA ACETATA.

Lond.

Acetated cerusse.

Take of

Cerusse, one pound;

Distilled vinegar, one gallon.

Boil the cerusse with the vinegar until the vinegar is saturated; then filter through paper; and, after proper evaporation, set it aside to crystallise.

CERUSSA ACETATA, vulgo SACCHARUM SATURNI.

Edinb.

Acetated cerusse, commonly called

Sugar of lead.

Put any quantity of cerusse into a cucurbit, and pour upon it ten times its quantity of distilled vinegar. Let the mixture stand upon warm sand till the vinegar becomes sweet; when it is to be poured off, and fresh vinegar added as often as it comes off sweet. Then let all the vinegar be evaporated in a glass vessel to the consistence of pretty thin honey, and set it aside in a cold place, that crystals may be formed, which are to be afterwards dried in the shade. The remaining liquor is again to be evaporated that new crystals may be formed; the evaporation of the residuous liquor is to be

be repeated till no more crystals concrete.

CERUSE (especially that sort called *flake lead*, which is not, like the others subject to adulteration) is much preferable either to minium or litharge, for making the sugar of lead: for the corrosion, which it has undergone from the steam of the vinegar, disposes it to dissolve more readily. It should be finely powdered before the vinegar be put to it; and during the digestion, or boiling, every now and then stirred up with a wooden spatula, to promote its dissolution, and prevent its concreting into a hard mass at the bottom. The strong acid obtained from the *caput mortuum* of vinegar may be employed for this purpose to better advantage than the weaker, though purer, acid, above directed. If a small quantity of rectified spirit of wine be prudently added to the solution as soon as it is duly exhaled, and the mixture suffered to grow cold by slow degrees, the sugar will concrete into very large and transparent crystals, which are scarcely to be obtained by any other method.

If the crystals be dried in sunshine, they acquire a blackish or livid colour. This seems to happen from the absorption of light. As lead communicates a sweetness and astringency very similar to the product of the vinous fermentation, a practice formerly prevailed among fraudulent dealers, of correcting the too great sharpness of acid wines by adulterating them with this metal. The abuse may be detected in two different ways: a piece of paper may be moistened

with the liquor to be examined, and then exposed to the vapours of liver of sulphur: the moistened paper, will become of a livid colour. But the best way of making the test is, to drop a small quantity of a solution of the liver of sulphur into the suspected liquor: if there be any lead present, this addition will instantly occasion the precipitation of a livid or dark coloured cloud.

The sugar of lead is much more efficacious than the foregoing preparations, in answering the several intentions to which they are applied. Some have ventured upon it internally, in doses of a few grains, as a styptic, in hæmorrhages, profuse colluvative sweats, seminal fluxes, the fluor albus, &c. nor has it failed their expectations. It very powerfully restrains the discharge; but almost as certainly as it does this, it occasions symptoms of another kind, often more dangerous than those removed by it, and sometimes fatal. Violent pains in the bowels or through the whole body, and obstinate constipations, sometimes immediately follow, especially if the dose has been considerable: and cramps, tremors, and weakness of the nerves generally, sooner or later, ensue.

Boerhaave was of opinion, that this preparation proves malignant only, as far as its acid happens to be *absorbed* in the body; for in such case, he says, "it returns again into ceruse, which is violently poisonous." On this principle it would follow, that in habits where acidities abound, the sugar of lead would be innocent. But this is far from being the case. Lead and its preparations act

act in the body only when they are combined with acid: cerussa possesses the qualities of the saccharum only in a low degree; and either of them freed from the acid, has little, if any, effect at all. For the same reasons, the sugar of lead is preferable to the pompous *extra* and *vegeto-mineral water* of Goulard, in which the lead is much less perfectly combined in a saline state. It is sometimes convenient to assist the solution of the sugar of lead in water, by adding a portion of vinegar. The effects of the external application of lead seems to differ from the strength of the solution: thus a very weak solution seems to diminish directly the action of the vessels, and is therefore more peculiarly proper in active inflammations, as of the eyes; whereas a strong solution operates as a direct stimulant, and is therefore more successful in passive ophthalmia.

AQUA LITHARGYRI ACETATI.

Lond.

Water of acetated Litharge.

Take of

Litharge, two pounds and four ounces;

Distilled vinegar, one gallon.

Mix, and boil to fix pints, constantly stirring; then set it aside. After the feces have subsided, strain.

THIS preparation may be considered as nearly the same with the extract and vegeto-mineral water of Mr Goulard. And it is probably from the circumstances of his preparations having come into a common use, that the London college have given this article a place in their pharmacopœia. It may, however, be a matter of doubt whether it be really intitled to a place. For as we have already observed, every purpose to be answered by it may be better obtained from the employment of a solution of the cerussa acetata in simple water. The aqua lithargyri acetati is intended for external use only.

C H A P. XV.

PRÆPARATA E STANNO.

PREPARATIONS OF TIN.

TIN easily melts in the fire, and calcines into a dusky powder; which, by a farther continuance of the heat becomes white. A mass of tin heated till it be just ready to melt, proves extremely brittle, so as to fall in pieces from a blow; and by dexterous agitation into powder. Its proper menstruum is aqua regia; though the other mineral acids may also be made to dissolve it, and the vegetable ones in small quantity. It crystallises with the vegetable and vitriolic acids; but with the others, deliquesces.

The virtues of this metal are little known. It has been recommended as an antihysteric, antihætic, &c. At present, it is chiefly used as an anthelmintic.

PULVIS STANNI.

Lond.
Tin powder.

Take of

Tin, four ounces.

Melt it and take off the film formed

on its surface; then pour it into a clear iron vessel, and either by agitation or rubbing reduce it to a powdery state; pass the finer parts through a hair sieve.

THE college of Edinburgh do not give this preparation, inserting *Limatura et Pulvis Stanni* in their list of the materia medica. It is often employed as a remedy against worms, particularly the flat kinds, which too often elude the force of other medicines. The general dose is from a scruple to a drachm; some confine it to a few grains. But Dr Alston assures us, in the Edinburgh Essays, that its success chiefly depends on its being given in much larger quantities: he directs an ounce of the powder on an empty stomach mixed with four ounces of molasses; next day, half an ounce and the day following, half an ounce more; after which a cathartic is administered; he says the worms are usually voided during the operation.

tion of the purge, but that pains of the stomach occasioned by them are removed almost immediately upon taking the first dose of the tin.

This practice is sometimes successful in the expulsion of tænia, but by no means so frequently as Dr Alston's observations would lead us to hope.

STANNI AMALGAMA.

Dan.

Amalgama of Tin.

Take of

Shavings of pure tin, two ounces ;

Pure quicksilver, three drachms. Let them be rubbed to a powder in a stone mortar.

Some have imagined that tin thus acted on by mercury, is in a more active condition than when exhibited in the state of powder : and accordingly it has been given in worm cases. But as both are equally insoluble in the animal fluids, this is not to be expected ; and to obtain any peculiar properties which tin may possess to their full extent, it will probably be necessary to exhibit it in some saline state.

C H A P. XVI.

PRÆPARATA E ZINCO.

PREPARATIONS OF ZINC.

ZINCUM CALCINATUM.

*Lond.**Calined Zinc.*

Take of

Zinc, broken into small pieces,
eight ounces.

Cast the pieces of zinc, at several times, into an ignited large and deep crucible, placed leaning, or half-upright, putting on it another crucible in such a manner that the air may have free access to the burning zinc.

Take out the calx as soon as it appears, and separate its white and lighter part by a fine sieve.

ZINCUM USTUM, vulgo
FLORES ZINCI.*Edin.*

Burnt Zinc, commonly called
Flowers of Zinc.

Let a large crucible be placed in a furnace, in an inclined situation, only half upright; when the bottom of the vessel is moderate-

ly red, put a small piece of zinc, about the weight of a drachm into it. The zinc soon flames, and is at the same time converted into a spongy calx, which is to be raked from the surface of the metal with an iron spatula, that the combustion may proceed the more speedily: when the zinc ceases to flame, take the calx out of the crucible. Having put in another piece of zinc, the operation may be repeated as often as you please. Lastly, the calx is to be prepared like antimony.

THESE flowers, as used externally, are preferable for medicinal purposes to tutty, and the more impure sublimes of zinc, which are obtained in the bras works; and likewise to calamine, the natural ore of this metal, which contains a large quantity of earth, and frequently a portion of heterogeneous metallic matter. The flowers of zinc, have been much celebrated of late years in the

the cure of epilepsy and several spasmodic affections: and there are sufficient testimonies of their good effects, where tonic remedies in those affections are proper. They ought to be given at first in very small doses, as a grain or two twice a day; and the dose gradually increased to seven or eight grains.

ZINCUM VITRIOLATUM, vulgo VITRIOLUM ALBUM.

Edin.

Vitriolated Zinc, commonly called *White vitriol*.

Take of

Zinc, cut into small pieces, three ounces;

Vitriolic acid, five ounces;

Water, twenty ounces.

Having mixed the acid and water, add the zinc, and when the ebullition is finished strain the liquor; then after proper evaporation set it apart in a cold place, that it may shoot into crystals.

This salt is an elegant white vitriol. It differs from the common white vitriol of the shops, only in

being purer, and perfectly free from any admixture of copper, or other foreign metallic bodies.

ZINCUM VITRIOLATUM.

Lond.

Vitriolated Zinc.

Take of

White vitriol, one pound;

Vitriolic acid, one drachm;

Boiling distilled water, three pints.

Mix, and filter through paper.

After a proper evaporation, set it aside in a cold place to crystallise.

ALTHOUGH the Edinburgh college have given a formula for the preparation of white vitriol, yet their direction is very rarely followed by any of the apothecaries or chemists, who in general purchase it as obtained from the Goslar mines. When, however, it is got in this way, it is often a very impure salt, and requires that purification which is here directed, and which is by no means necessary for the white vitriol artificially prepared, in the manner above directed.

C H A P. XVII.

PRÆPARATA E CUPRO.

PREPARATIONS OF COPPER.

COPPER is a reddish soft metal requiring a very intense heat for its fusion. In its metallic state it produces some action on the animal fluids and solids. Dissolved it is externally an escharotic, and internally a most violent poison, unless given with great caution and in proper doses. It is of very easy solution in all acids and in the volatile alkali.

CUPRUM AMMONIACUM.

*Edin.**Ammoniacal Copper.*

Take of

Vitriolated copper, two parts ;

Prepared ammonia, three parts.

Rub them together in a glass mortar, until they unite, after the effervescence ceases, into a uniform violet-coloured mass, which must be first dried on blotting paper, and afterwards by a gentle heat. The product must be kept in a glass phial,

well closed with a glass stopper.

THIS preparation has been thought serviceable in epilepsies; but from its frequent want of success and the disagreeable consequences with which its use is sometimes attended, it has not lately been much prescribed. It is employed by beginning with doses of half a grain, twice a day ; and increasing them gradually to as much as the stomach will bear. Dr Cullen sometimes increased the dose to five grains.

AQUA ÆRUGINIS AMMONIATÆ, vulgo AQUA SAPHIRINA.

Edin.

Water of Ammoniated verdigris, commonly called Sapphire water.

Take of

Lime water fresh made, eight ounces ;

Sal ammoniac, two scruples ;

Verdegris powdered, four grains.

Mix

Mix them, and after twenty four hours filtre the liquor.

This water is used externally for cleaning foul ulcers, and disposing them to heal. It has been recommended also for taking off specks and films from the eyes; but when used with this intention it ought to be diluted with some pure water, as in the state of strength in which it is here ordered, it irritates and inflames the eyes not a little.

AQUA CUPRI VITRIOLATI COMPOSITA, vulgo
AQUA STYPTICA.

Edin.

Compound water of *Vitriolated copper*, commonly called *styptic water*.

Take of

Vitriolated Copper,

Alum, of each three ounces;
Water, two pounds;

Vitriolic acid, one ounce and
an half.

Boil the salts in the water that they may be dissolved, and to the filtered liquor add the vitriolic acid.

This styptic water is somewhat similar to the old *aqua aluminosa Batana* of the former pharmacopœias, so much celebrated for stopping profuse hæmorrhages. Its chief use is for stopping bleedings at the nose; and for this purpose cloths or doffils steeped in the liquor are to be applied to the part.

C H A P.

C H A P. XVIII.

AQUÆ DISTILLATÆ.

London.

AQUÆ STILLATIÆ.

Edinburgb.

DISTILLED WATERS.

THE effluvia which exhale into the air from many vegetables, particularly from those of the odorous kind, consist apparently of principles of great subtility and activity, capable of strongly and suddenly affecting the brain and nervous system, especially in those whose nerves are of great sensibility; and likewise of operating in a slower manner, on the system of the grosser vessels. Thus Boerhaave observes, that in hysterical and hypochondriacal persons, the fragrant odour of the Indian hyacinth excites spasms, which the strong scent of rue relieves; that the effluvia of the walnut-tree occasions headaches, and makes the body collicive; that those of poppies procure sleep; and that the smell of bean blossoms, long continued, disorders the

senses. Lemery relates, from his own knowledge, that several persons were purged by staying long in a room where damask roses were drying.

Some of the chemists have indulged themselves in the pleasing survey of these presiding spirits, as they are called, of vegetables; their peculiar nature in the different species of plants; their exhalation into the atmosphere by the sun's heat, and dispersion by winds; their rendering the air of particular places medicinal, or otherwise, according to the nature of the plants that abound. They have contrived also different means for collecting these fugitive emanations, and concentrating and condensing them into a liquid form: employing either the native moisture of the subject, or an addition

of water, as a vehicle or matrix for retaining them.

The process which has been judged most analogous to that of nature, is the following. The subject fresh gathered at the season of its greatest vigour, with the morning dew on it, is laid lightly and unbruised in a shallow vessel, to which is adapted a low head with a recipient; under the vessel a live coal is placed, and occasionally renewed, so as to keep up an uniform heat, no greater than about 85 degrees of Fahrenheit's thermometer. In this degree of heat there arises, exceeding slowly, an invisible vapour, which condenses in the head into dewy drops, and falls down into the receiver; and which has been supposed to be the very substance that the plant would have spontaneously emitted in the open air.

But on submitting many kinds of odiferous vegetables to this process, the liquors obtained by it have been found to be very different from the natural effluvia of the respective subjects; they have had very little smell, and no remarkable taste. It appeared that a heat, equal to that of the atmosphere, is incapable of raising in close vessels, those parts of vegetables which they emit in the open air. It may therefore be presumed, that in this last case some other cause concurs to the effect: that it is not the sun's heat alone which raises and impregnates the air with the odorous principles of vegetables, but that the air itself, or the watery humidity with which it abounds acting as a true solvent, extracts and imbibes them: so that the natural effluvia of a plant may be considered as an infusion of the plant made in air. The purgative virtue of the damask

rose, and the astringency of the walnut-tree, which, as above observed, are in some degree communicated to the air, may be totally extracted by infusion both in watery and spirituous menstrua, but never rise in distillation with any degree of heat: and the volatile odours of aromatic herbs, which are diffused through the atmosphere in the lowest warmth, cannot be made to distil without a heat much greater than is ever found to obtain in a shaded air.

The above process therefore, and the theory on which it is built, appear to be faulty in two points: 1. In supposing that all these principles which naturally exhale from vegetables, may be collected by distillation; whereas there are many which the air extracts in virtue of its solvent power; some are also incapable of being collected in a visible and inelastic form; and some are artificially separable by solvents only: 2. In employing a degree of heat insufficient for separating even those parts which are truly exhalable by heat.

The foregoing method of distillation is commonly called *distillation by the cold still*; but those who have practised it, have generally employed a considerable heat. A shallow leaden vessel is filled with the fresh herbs, flowers, &c. which are heaped above it; so that when the head is fitted on, this also may be filled a considerable way. A little fire is made under the vessel, sufficient to make the bottom much hotter than the hand can bear, care being only taken not to heat it so far as to endanger scorching any part of the subject. If the bottom of the vessel be not made so hot as to have this effect on the part contiguous to it, there is no fear that the heat communi-

cated

cated to the rest of the included matter will be so great as to do it any injury. By this management, the volatile parts of several odorous plants, as mint, are effectually forced over; and if the process has been skilfully managed, the distilled liquor proves richly impregnated with the native odour and flavour of the subject, without having received any kind of disagreeable impression from the heat used.

This process has been chiefly practised in private families; the slowness of the distillation, and the attendance and care necessary for preventing the scorching of some part of the plant, so as to communicate an ungrateful burnt flavour to the liquor, rendering it inconsistent with the dispatch requisite in the larger way of bulinefs.

Another method has therefore been had recourse to, viz by the common still, called, in distinction from the foregoing, the *hot still*. Here a quantity of water is added to the plant to prevent its burning; and the liquor is kept nearly of a boiling heat, or made to boil fully, so that the vapour rises plentifully into the head, and passing thence into a spiral pipe or worm placed in a vessel of cold water, is there condensed, and runs out in drops quickly succeeding each other, or in a continued stream. The additional water does not at all weaken the produce: for the most volatile parts of the subject rise first, and impregnate the liquor that first distils: as soon as the plant has given over its virtue sufficiently, which is known by examining from time to time the liquor that runs from the nose of the worm, the distillation is to be stopped.

This is the method of distilla-

tion commonly practised for the officinal waters. It is accompanied with one imperfection, affecting chiefly those waters whose principal value consists in the delicacy of their flavour; this being not a little injured by the boiling heat usually employed, and by the agitation of the odorous particles of the subject with the water. Sometimes also a part of the plant sticks to the sides of the still, and is so far scorched as to give an ungrateful taint to the liquor.

There is another method of managing this operation, which has been recommended for the distillation of the more volatile essential oils, and which is equally applicable to that of the waters. In this way, the advantages of the foregoing methods are united, and their inconveniencies obviated. A quantity of water being poured into the still, and the herbs or flowers placed in a basket over it, there can be no possibility of burning; the water may be made to boil, but so as not to rise up into the basket, which would defeat the intention of this contrivance. The hot vapour of the water, passing gently through all the interstices of the subject matter, imbibes and carries over the volatile parts unaltered in their native flavour. By this means the distilled water of all those substances whole oils are of the more volatile kind, are obtained in the utmost perfection, and with sufficient dispatch.

In the distillation of essential oils, the water, as was observed in a foregoing section, imbibes always a part of the oil. The distilled liquors here treated of, are no other than water thus impregnated with the essential oil of the subject; whatever smell, taste, or virtue, is communicated to the water,

water, or obtained in the form of a watery liquor, being found in a concentrated state in the oil. The essential oil, or some part of it, more attenuated and subtilised than the rest, is the direct principle on which the title of *spiritus rectior*, or presiding spirit, has been bestowed.

All those vegetables therefore which contain an essential oil, will give over some virtue to water by distillation: but the degree of the impregnation of the water, or the quantity of water which a plant is capable of saturating with its virtue, are by no means in proportion to the quantity of its oil.

The oil saturates only the water that comes over at the same time with it: if there be more oil than is sufficient for this saturation, the surplus separates, and concretes in its proper form, not miscible with the water that arises afterwards. Some odoriferous flowers, whose oil is in so small quantity, that scarcely any visible mark of it appears, unless fifty or an hundred pounds or more are distilled at once, give nevertheless as strong an impregnation to water as those plants which abound most with oil.

Many have been of opinion, that distilled waters may be more and more impregnated with the virtues of the subject, and their strength increased to any assigned degree, by *cobobation*, that is, by redistilling them a number of times from fresh parcels of the plant. Experience, however, shews the contrary; a water skilfully drawn in the first distillation, proves on every repeated one not stronger but more disagreeable. Aqueous liquors are not capable of imbibing above a certain quantity of the volatile oil of vegetables; and this

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they may be made to take up by one, as well as by any number of distillations: the oftener the process is repeated, the ungrateful impression which they generally receive from the fire, even at the first time, becomes greater and greater. Those plants, which do not yield at first waters sufficiently strong, are not proper subjects for this process, since their virtue may be obtained much more advantageously by others.

General rules for the DISTILLATION of the OFFICIAL SIMPLE WATERS.

I.

Where they are directed fresh, such only must be employed: but some are allowed to be used dry, as being easily procurable in this state at all times of the year, though rather more elegant waters might be obtained from them while green.

WHEN fresh and juicy herbs are to be distilled, thrice their weight of water will be fully sufficient; but dry ones require a much larger quantity. In general, there should be so much water, that after all intended to be distilled has come over, there may be liquor enough left to prevent the matter from burning to the still.

Plants differ so much, according to the soil and season of which they are the produce, and likewise according to their own ages, that it is impossible to fix the quantity of water to be drawn from a certain weight of them to any invariable standard. The distillation may always be continued as long as the liquor runs well flavoured

flavoured off the subject, and no longer.

II.

The distillation may be performed in an alembic with a refrigeratory, the junctures being luted ; or in a common still.

III.

The distillation is to be continued as long as the water, which comes over, is perceived to have any smell or taste of the subject.

AFTER the odorous water, alone intended for use, has come over, an acidulous liquor arises, which has sometimes extracted so much from the copper head of the still as to prove emetic. To this are owing the anthelmintic virtues attributed to certain distilled waters.

IV.

If any drops of oil swim on the surface of the water, they are to be carefully taken off.

V.

That the waters may keep the better, about a twentieth part their weight of proof spirit may be added to each after they are distilled. The Edinburgh pharmacopœia directs half an ounce of proof spirit to be added to every pound of the distilled water.

A great number of distilled waters were formerly kept in the shops, and are still retained in foreign pharmacopœias. The Faculty of Paris direct, in a late edition of their *Codex Medicamentarius*, no less than one hundred and twenty five different waters, and one hundred and thirty different ingredients in one single water. Nearly one half of these have scarcely any virtue or flavour

from the subject, and many of the others are insignificant.

The Colleges of London and Edinburgh have rejected these ostentatious superfluities, and given an elegant and compendious set of waters, sufficient for answering such purposes as these kinds of preparations are applied to in practice. Distilled waters are employed chiefly as grateful diluents, as suitable vehicles for medicines of greater efficacy, or for rendering disgusting ones more acceptable to the palate and stomach ; few are depended on, with any intention of consequence, by themselves.

AQUA DISTILLATA.

Lond.

Distilled Water.

Take of

Spring-water, ten gallons.

Draw off by distillation, first, four pints ; which being thrown away, draw off four gallons. This water is to be kept in a glass or earthen bottle with a glass stopper.

AQUA DISTILLATA.

Edin.

Distilled Water.

Let spring or well water be distilled in very clean vessels till about two thirds are drawn off.

NATIVE water is seldom or never found pure, and generally contains earthy, saline, metallic, or other matters. Distillation is therefore employed as a means of freeing it from these heterogeneous parts. For some pharmaceutical purposes distilled water is absolutely necessary : thus, if we employ hard

undistilled water for dissolving sugar of lead, instead of a perfect transparent solution, we produce a milky one.

Distilled water is now employed by the London college for a great variety of purposes; and there can be no doubt, that in many chemical and pharmaceutical processes, the employment of a heterogeneous fluid, in place of the pure element, may produce an essential alteration of qualities, or frustrate the intention in view. While the London college have made more use of distilled water than any other, their directions for preparing it seem to be the best. For as some impregnations may be more volatile than pure water, the water may be freed from them by throwing away what comes first over; and by keeping it afterwards in a close vessel, absorption from the air is prevented.

THE London college determine the quantity of water to be distilled by measure, while that of Edinburgh determine it by weight. But the comparative strengths may be easily known, since the Edinburgh college always direct 10 pounds, and that of London always a gallon, which is 10 pounds 1 ounce 6 drachms and 4 grains; so that we may without any sensible error estimate the gallon at 10 pounds.

Although the dill-water holds a place, not only in the London and Edinburgh pharmacopœias, but also in most of the foreign ones; yet it is not much employed in practice. It obtains, indeed, a pretty strong impregnation from the seeds, and is sometimes employed as a carminative, particularly as the basis of mixtures and juleps; but it is less powerful and less agreeable than that of peppermint, cinnamon, and some others.

AQUA ANETHI.

Lond.

Dill Water.

Take of

Dill-seed, bruised, one pound;
Water, sufficient to prevent an empyreuma.
Draw off one gallon.

AQUA SEMINUM ANETHI.

Edin.

Dill seed Water.

Take of

Dill-seeds, one pound;
Pour on as much water as when ten pounds have been drawn off by distillation, there may remain as much as is sufficient to prevent an empyreuma.
After proper maceration, let ten pounds be drawn off.

AQUA CINNAMONI.

Lond. Ed.

Cinnamon Water.

Take of

Cinnamon, bruised, one pound;
Water, sufficient to prevent an empyreuma.

Macerate for twenty four hours, and draw off one gallon.

THIS is a very grateful and useful water, possessing in an eminent degree the fragrance and aromatic cordial virtues of the spice. Where real cinnamon water is wanted, care should be had in the choice of the cinnamon, to avoid the too common imposition of cassia being substituted in its room. The two drugs may be easily distinguished from each other by the

the marks laid down under the respective articles in the Second Part of this work: but the essential oils of the two approach so near, that after distillation it is perhaps impossible to distinguish the waters; and it is still more doubtful how far the one is in any degree preferable to the other.

The oil of cinnamon is very ponderous, and arises more difficultly than that of any other of the vegetable matters from which simple waters are ordered to be drawn. This observation directs us, in the distillation of this water, to use a quick fire and a low vessel. For the same reason, the water does not keep so well as might be wished; the ponderous oil parting from it in time, and falling to the bottom, when the liquor loses its milky hue, its fragrant smell, and aromatic taste. Some recommend a small proportion of sugar to be added, in order to keep the oil united with the water.

AQUA CASSIÆ LIGNÆ.

Edinb.

Cassia Water.

From a pound and a half of the cassia bark, ten pounds of water are directed to be drawn off in the same manner as the dill water.

This distilled water, as we have already observed, when properly prepared, approaches so near to that of cinnamon, that it is almost if not altogether, impossible to distinguish the difference between the two. And although the London college has given it no place in their pharmacopœia, yet it is no stranger to the shops of the

apothecaries. The difference of price between this and cinnamon water is so great, and the sensible qualities so nearly alike, that what is sold under the name of cinnamon water is almost entirely prepared from cassia alone; and not even from the cassia bark, as directed by the Edinburgh college, but from the cassia buds, which may be had at a still cheaper rate, and which yield precisely the same essential oil, although in less quantity. When cassia water is prepared precisely according to the directions of the Edinburgh college, from containing a larger proportion of the subject, it has in general a stronger impregnation than their genuine cinnamon water, and is probably in no degree inferior in its virtues.

AQUA FENICULI.

Lond

Fennel Water.

Take of

Sweet fennel-seeds, bruised, one pound;

Water sufficient to prevent an empyreuma.

Draw off one gallon.

THE water of fennel seeds is not unpleasing. A water has also been distilled from the leaves. When these are employed, they should be taken before the plant has run into flower; for after this time they are much weaker, and less agreeable. Some have observed, that the upper leaves and tops, before the flowers appear, yield a more elegant water, and a remarkably finer essential oil than the lower ones; and that the oil obtained from the one swims on water, while that of the other sinks.

sinks. No part of the herb, however, is equal in flavour to the seeds.

AQUA MENTHÆ PIPERITIDIS.

Lond.

Peppermint Water.

Take of

Peppermint, dried, one pound and an half;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

Edinb.

From three pounds of fresh peppermint in flower, ten pounds of water are to be drawn off.

This is a very elegant and useful water; it has a warm pungent taste, exactly resembling that of the peppermint itself. A spoonful or two taken at a time, warms the stomach, and gives great relief in cold, flatulent colics. Some have substituted a plain infusion of the dried leaves of the plant, which is not greatly different in virtue from the distilled water.

In the distillation of this water, a considerable quantity of essential oil, generally comes over in its pure state. And it is not uncommon to employ this for impregnating other water, with which it may be readily mixed by the aid of a little sugar.

AQUA MENTHÆ SATIVÆ.

Lond.

Spearmint Water.

Take of

Spearmint, dried, one pound and an half;

Water, sufficient to prevent an empyreuma.
Draw off one gallon.

THE Edinburgh college directs this water to be made in the same proportion as the preceding. But probably three pounds of the fresh herb will not give a stronger impregnation than a pound and a half of the dried; So that the water of the London college may be considered to be as strongly impregnated as that of the Edinburgh college.

This water smells and tastes very strongly of the mint; and proves in many cases an useful stomachic. Boerhaave commends it (cohabated) as a pleasant and incomparable remedy for strengthening a weak stomach, and curing vomiting proceeding from cold viscous phlegm; and also in lienteries.

AQUA PIMENTO.

Lond. Edinb.

All Spice Water.

Take of

All-spice bruised, half a pound;
Water, sufficient to prevent an empyreuma.

Macerate for twenty four hours, and draw off one gallon.

THIS distilled water is a very elegant one, and has of late come pretty much into use; the hospitals employ it as a succedaneum for the more costly spice waters. It is, however, inferior in gratefulness to the spirituous water of the same spice hereafter directed.

AQUA PULEGIL.

*Lond. Edinb.**Penny-royal Water.*

Take of

Dried penny-royal, one pound
and a half;Water, sufficient to prevent an
emphyreuma.

Draw off one gallon.

shops, and supplied by that of damask roses, diluted with common water: this is a very venial substitution: for the water drawn from the red rose has no quality which that of the damask does not possess in a far superior degree; neither the purgative virtue of the one, nor the astringency of the other, arising in distillation.

THE penny-royal water is directed to be prepared by the Edinburgh college in the same proportions as the mint and peppermint. Whether prepared from the recent or dried plant, it possesses in a considerable degree the smell, taste, and virtues, of the penny-royal. It is not unfrequently employed in hysterical cases, and sometimes with a good effect.

AQUA CORTICIS LIMONUM RECENTIUM.

*Edin.**Lemon-peel Water.*

From two pounds of recent lemon-peel, ten pounds of water are to be drawn off by distillation.

AQUA CORTICIS AURANTIORUM HISPALENSIVM RECENTIUM.

*Edinb.**Orange-peel Water.*

From two pounds of recent orange-peel, ten pounds of water are directed to be drawn off.

Take of

Fresh petals of the damask rose,
the white heels being cut off,
six pounds;Water, sufficient to prevent an
emphyreuma.

Draw off one gallon.

THESE distilled waters are chiefly employed as diluents in fevers and other disorders where the stomach and palate are very apt to be disgusted.

THIS water is principally valued on account of its fine flavour, which approaches to that generally admired in the rose itself. The purgative virtue of the roses remains entire in the liquor left in the still, which has therefore been generally employed for making the solutive honey and syrup, instead of a decoction or infusion of fresh roses prepared on purpose: And this piece of frugality the college have now admitted. A distilled water of red roses has been sometimes called for in the

The distilled waters above noticed are the whole that have now a place in the pharmacopœias of the London and Edinburgh colleges: And this selection is sufficiently large for answering every useful purpose. A considerable number of others are however still retained in the modern foreign pharmacopœias; some of which at least it may not be improper to mention.

AQUA ALEXITERIA.

*Brun.**Alexiterial Water.*

Water, as much as will prevent burning.
Draw off two pints.

Take of

Elder flowers, moderately dried,
three pounds;

Angelica leaves, fresh gathered,
two pounds;

Spring water, forty pounds.

Draw off, by distillation, thirty
pounds.

THIS water is sufficiently elegant with regard to taste and smell; though few expect from it such virtues as its title seems to imply. It is used occasionally for vehicles of alexipharmac medicines, or in juleps to be drank after them, as coinciding with the intention.

AQUA CAMPHORÆ.

*Brun.**Camphor Water.*

Take of

Camphor, an ounce and an
half.

Let it be dissolved in half an ounce of spirit of rosemary, then pour on it two pounds of spring water, and draw off by distillation a pound and an half.

THIS distilled water contains the camphor in a dilute state, but in only a very small quantity; where however it cannot be taken in any other form, this seems to be useful.

AQUA CASTOREI.

*Brun.**Castor Water.*

Take of

Russia castor, one ounce;

CASTOR yields almost all its flavour in distillation to water; but treated in the same manner with spirit of wine, gives over nothing. The spirit of castor formerly kept in the shops had none of the smell or virtues of the drug; while the water here directed proves, when fresh drawn, very strong of it.

It is remarkable, that the virtues of this animal substance reside in a volatile oil, analogous to the essential oils of vegetables: some are reported to have obtained, in distilling large quantities of this drug, a small portion of oil, which smelt extremely strong of the castor, and diffused its ungrateful scent to a great distance.

This water is used in hystERIC cases, and some nervous complaints, though it has not been found to answer what many people expect from it; it loses its flavour considerably by keeping.

AQUA CEREFOLII.

*Gen.**Chervil Water.*

Take of

Fresh leaves of chervil, one
pound;

Spring water, as much as is
sufficient for allowing eight
pounds to be drawn off by distillation, at the same time avoiding empyreuma.

ALTHOUGH the chervil be but little employed in Britain yet it is held in high esteem on the continent; and the distilled water is perhaps one of the most elegant forms under which its active parts can

can be introduced. There is however reason to believe, that those diuretic powers for which it has been chiefly celebrated, will be most certainly obtained from exhibiting it in substance, or under the form of the expressed juice of the recent plant.

AQUA CERASI.

Succ.

Black-cherry Water.

Take of

Ripe black cherries, bruised with the kernels, 20 pounds;

Pure water, as much as is sufficient for avoiding empyreuma.

Draw off 20 pounds by distillation.

THIS water, although now banished from our pharmacopœias, has long maintained a place in the foreign ones, and even in Britain it is frequently to be met with in the shops. It has often been employed by physicians as a vehicle, in preference to the other distilled waters; and among nurses who have the care of young children, has been the chief remedy against the convulsive disorders to which infants are so often subject. It has however of late been brought into disrepute, and has been esteemed poisonous. It receives its flavour principally from the cherry stones; and these kernels, like many others, bear a resemblance in taste to the leaves of the *lauro-cerasus*, which have been discovered to yield, by infusion or distillation, the most sudden poison known. Some physicians of Worcester have lately found, by trial purposely made, that a distilled water very strongly impregnated with the flavour of the cherry

kernels (no more than two pint being distilled from fourteen pounds of the cherry stones) proved in like manner poisonous to brutes. The London college repeated the same experiment, and found the effects agreeable to those gentlemen's report.

From these trials, nor after such long experience, we cannot conclude black cherry water, when no stronger than the shops have been accustomed to prepare it, to be unsafe. These kernels plainly resemble opium, and some other things, which poison only when taken in too great quantity; the water from the very laurel leaves is harmless when duly diluted: and even spirit of wine proves a poison of its kind not greatly different, if drank to a certain degree of excess; nor can it be concluded, from the trials with the strong black cherry water on dogs, &c. that it will have the same effects in the human body; the kernels of many sorts of fruits being in substance poisonous to brutes, though innocent to man.

This water however in any degree of strength may not be altogether safe for infants, where the principles of life are but just beginning as it were to move: it may possibly have had pernicious effects in these cases with ut being suspected: the symptoms it would produce, if it should prove hurtful, being such as children are often thrown into from the disease which it is imagined to relieve. On these considerations, both the London and Edinburgh colleges have chosen to lay it aside; more especially as it has been too often counterfeited with a water distilled from bitter almonds, which are known to communicate a poisonous quality. It is, how-

er, one of those active articles which deserved farther attention.

very agreeable flavour; but any considerable medical power is not to be expected from it.

AQUA CHAMEMELI FLORUM.

Dan.

Chamomile flower Water.

Take of

Chamomile flowers, dried in the shade, eight pounds;

Water, seventy two pounds; draw off by gentle distillation forty eight pounds.

CHAMOMILE flowers were formerly ordered to be fermented previously to the distillation, a treatment which they do not need; for they give over, without any fermentation, as much as that process is capable of enabling them to do. In either case the smell and peculiar flavour of the flowers arise without any of their bitter acids, which remains behind in the decoction; and if duly depurated and inspissated, yields an extract similar to that prepared from the flowers in the common manner. The distilled water has been used in flatulent colics, and the like, but is at present held in no great esteem.

AQUA FRAGORUM.

Succ.

Strawberry Water.

From twenty pounds of strawberries, twenty pounds of distilled water are drawn off, according to the same directions given for the preparation of the black-cherry water.

WATER thus impregnated with the essential oil of the strawberries, some people will think a

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AQUA HYSSOPI.

Succ.

Hyssop Water.

From four pounds of the fresh leaves of hyssop, six pounds of water are drawn off.

HYSSOP water has been held by some in considerable esteem as an uterine and a pectoral medicine. It was directed in a former edition of the Edinburgh pharmacopœia for making up the black pectoral troches, but is now exchanged for common water. Few at present expect any singular virtues from it, nor is it often met with in our shops, being now expunged from our pharmacopœias. It holds a place, however, in most of the foreign ones, and among ourselves there are still some practitioners who frequently employ it; although there can be no doubt that the medical properties of the hyssop may be more readily and effectually extracted by simple infusion.

AQUA LILIORUM ALBORUM.

Brun.

White-lily Water.

AQUA LILIORUM CONVALLIUM.

Brun.

Lily of the valley Water.

To any quantity of these flowers, four times their weight of water is to be added, and water drawn off by distillation in the proportion of two pounds to each pound of the flowers.

THESE

THESE waters must obtain some impregnation of that elegant essential oil, on which the odour of flowers in their growing state depends; but they do not possess any remarkable medical properties.

AQUA MELISSÆ.

Brun.

Balm Water.

The green leaves of the balm are to be macerated with double their weight of water; and from each pound of the plant a pound and an half of water is to be drawn off.

THIS water contains a considerable impregnation from the balm, which yields its essential oil pretty freely on distillation. Though now banished from our pharmacopœias, it has still a place in most of the foreign ones. In the old editions of the Edinburgh pharmacopœia, it was ordered to be cohobated, or re-distilled, from fresh quantities of the herb. This management seems to have been taken from Boerhaave, who has a very high opinion of the water thus prepared: he says, he has experienced in himself extraordinary effects from it, taken on an empty stomach; that it has scarce its equal in hypochondriacal and hysterical cases, in chlorosis, and palpitation of the heart, when those diseases proceed from a disorder of the spirits, and not from any collection of morbid matter.

The virtues of balm however may be much more perfectly and advantageously extracted by cold infusion in aqueous or spirituous menstrua: in this last process, the liquor suffers no injury from being returned on fresh parcels of the herb; a few repetitions will load

it with the virtues of the subject, and render it very rich. The impregnation here is almost unlimited; but in distilled waters it is far otherwise.

AQUA RUTÆ.

Ross.

Rue Water.

From each pound of rue, with a sufficient quantity of spring water to prevent empyreuma, two pounds of distilled water are to be drawn.

RUE gives over in this process the whole of its smell, and great part of its pungency. The distilled water stands recommended in epileptic cases, the hysterical passion, for promoting perspiration, and other natural secretions. But though it is a good deal employed abroad, it is with us falling into disrepute.

AQUA SABINÆ.

Brun.

Savin Water.

THIS is distilled from the fresh leaves of savin, after the same manner as the former.

THIS water is by some held in considerable esteem for the same purposes as the distilled oil of savin. Boerhaave relates, that he has found it (when prepared by cohobation) to give almost incredible motion to the whole nervous system; and that when properly used, it proves eminently serviceable for promoting the menses and the hæmorrhoidal flux.

It has now, however, fallen so much into disrepute as to have no place either in our pharmacopœias or in the best modern foreign ones; but

but when we reflect how readily *savin* yields a large proportion of active essential oil in distillation, it seems better intitled to attention than some other distilled waters which are still retained.

AQUA SAMBUCI.

Brun.
Elder flower Water.

This is distilled from fresh elder flowers, after the same manner as the white lily water.

THIS water smells considerably of the flowers; but is rarely used among us.

AQUA SALVIÆ.

Brun.
Sage Water.

This is directed to be prepared from the green leaves of the sage, in the same manner as the balm water.

SAGE leaves contain a considerable proportion of essential oil, which they yield pretty freely on

distillation; but their whole medicinal properties may with still greater ease and advantage be extracted by simple infusion.

To the chapter on simple distilled waters the London college have annexed the following remarks.

We have ordered the waters to be distilled from the dried herbs, because fresh are not ready at all times of the year. Whenever the fresh are used, the weights are to be increased. But, whether the fresh or dried herbs be employed, the operator may vary the weight according to the season in which they have been produced and collected.

Herbs and seeds, kept beyond the space of a year, are less proper for the distillation of waters.

To every gallon of these waters add five ounces, by measure, of proof spirit.

The Edinburgh college order half an ounce of proof-spirit to every pound of the water, which is nearly the same.

E H A P. XIX.

*SPIRITUS DISTILLATI.**London.**SPIRITUS STILLATITII.**Edinburgh.*

DISTILLED SPIRITS.

THE flavours and virtues of distilled waters are owing, as was observed in the preceding chapter, to their being impregnated with a portion of the essential oil of the subject from which they are drawn. Spirit of wine, considered as a vehicle for these oils, has this advantage above water, that it is their proper menstruum, and keeps all the oil that rises with it perfectly dissolved. Nevertheless, many substances, which, on being distilled with water, impart to it their virtues in great perfection; if treated in the same manner with spirit of wine, scarcely give it any smell or taste. This difference proceeds from the spirits not being susceptible of so great a degree of heat as water. Liquids in general, when made to boil, have received as great a heat as

they are capable of sustaining: now, if the extent of heat between freezing and boiling water, as measured by thermometers, be taken for a standard, spirit of wine will be found to boil with less than four-fifths of that heat, or above one-fifth less than the heat of boiling water. It is obvious therefore, that substances may be volatile enough to rise with the heat of boiling water, but not with that of boiling spirit.

Thus, if cinnamon, for instance, be committed to distillation with a mixture of spirit of wine and water, or with a pure proof spirit, which is no other than a mixture of about equal parts of the two: the spirit will rise first, clear, colourless, and transparent, and almost without any taste of the spice; but as soon as the more ponderous wa-

tery

very fluid begins to rise, the oil comes over freely with it, so as to render the liquor highly odorous, *spid*, and of a milky hue.

The proof-spirits usually met with in the shops are accompanied with a degree of ill flavour; which though concealed by means of certain additions, plainly discovers itself in distillation. This *gaseous* residuum does not begin to rise till after the purer spirituous part has come over; which is the very time that the virtues of the ingredients begin also most plentifully to distil; and hence the liquor receives an ungrateful taint. To this cause principally is owing the general complaint, that the cordials of the apothecary are less agreeable, than those of the same kind prepared by the distiller; the latter being extremely curious in rectifying or purifying the spirits (when designed for what he calls fine goods) from all ill flavour.

ALCOHOL.

Lond.

Ardent spirit.

Take of

Rectified spirit of wine, one gallon;

Kali, made hot, one pound and an half;

Pure kali, one ounce.

Mix the spirit of wine with the pure kali, and afterwards add one pound of the hot kali; shake them, and digest for twenty-four hours. Pour off the spirit, to which add the rest of the kali, and distil in a water bath. It is to be kept in a vessel well stopped.

The kali ought to be heated to 300 degrees.

The specific gravity of the alko-

hol is to that of distilled water as 815 to 1000.

We have already offered some observations on spirit of wine, both in the state of what is called rectified and proof spirit. In the present formula, we have ardent spirit still more freed from an admixture of water than even the former of these; and in this state it is unquestionably best fitted for answering several purposes. In former editions of our pharmacopœias, alkohol was directed to be prepared from French brandy; but this is rather too dear an article in this country for distillation; nor is the spirit obtained from it any ways preferable to one procurable from cheaper liquors. The coarser inflammable spirits may be rendered perfectly pure, and fit for the nicest purposes, by the following method.

If the spirit be exceedingly foul, mix it with about an equal quantity of water, and distil with a slow fire; discontinuing the operation as soon as the liquor begins to run milky, and discovers, by its nauseous taste, that the impure and phlegmatic part is rising. By this treatment, the spirit leaves a considerable portion of its foul oily matter behind it in the water, which now appears milky and turbid, and proves highly disagreeable to the taste. If the spirit be not very foul at first, this ablution is not necessary; if extremely so, it ought to be repeated once, twice, or even often-er.

As vinous spirits arise with a less degree of fire than watery liquors, we are hence directed to employ, in the distillation of them, a heat less than that in which water

water boils, and if due regard be had to this circumstance, very weak spirits may, by one or two way distillations, be tolerably well freed from their aqueous phlegm; especially if the distilling vessels are of such a height, that the spirit, by the heat of a water-bath, may but just pass over them; in this case, the phlegmatic vapours which rise for a little way along with the spirit, will condense and fall back again before they can come to the head. Very pompous instruments have been contrived for this purpose, and carried in a spiral or serpentine form to an extraordinary height. The spirit, ascending through these, was to leave all the watery parts it contained, in its passage, and come over perfectly pure and free from phlegm. But these instruments are constructed on erroneous principles, their extravagant height defeating the end it was designed to answer: if the liquor be made to boil, a considerable quantity of mere phlegm will come over along with the spirit; and if the heat be not raised to this pitch, neither phlegm nor spirit will distil. The most convenient instrument is the common still; between the body of which and its lead an adapter or copper tube may be fixed.

The spirit being washed, as above directed, from its foul oil, and freed from the greatest part of the phlegm by gentle distillation in a water-bath; add to every gallon of it a pound or two of pure, dry fixt alkaline salt. Upon digesting these together for a little time, the alkali, from its known property of attracting water and oils, will imbibe the remaining phlegm, and such part

of the disagreeable unctuous matter as may still be left in the spirit, and will sink with them to the bottom of the vessel. If the spirit be now again gently drawn over, it will rise, entirely free from its phlegm and nauseous flavour; but some particles of the alkaline salt are apt to be carried up with it, and give what the workmen call an urinous relish; this may be prevented by adding, previous to the last distillation, a small proportion of calcined vitriol, alum, or sal catharticus amarus; the acid of these salts will unite with and neutralise the alkali, and effectually prevent it from rising: while no more of the acid of the salts is extricated than what the alkali absorbs.

The addition of alkalize salt, for imbibing the water, and preventing its rising with the spirit, has been long practised, but is attended with the inconvenience above mentioned. This may be avoided by using, instead of the fixt alkali, some muriated lime in a dry and warm state, which has a remarkable strong attraction for water. This muriated lime need not to be prepared on purpose, being the residuum after the sublimation of volatile alkali from sal ammoniac and chalk, or the distillation of the caustic volatile alkali, which ought to be preserved for this purpose.

The spirit obtained by this means is extremely pure, limpid, perfectly flavourless, and fit for the finest purposes. It may be reduced to the strength commonly understood by proof, by mixing twenty ounces of it with seventeen ounces of water. The distilled cordials made with these spirits prove much more elegant and agreeable, than when the com-

mon rectified or proof-spirits of the shops are used.

If the rectified spirit be distilled afresh from dry alkaline salt, with a quick fire, it brings over a considerable quantity of the salt : and in this state it is supposed to be a more powerful menstruum for certain substances than the pure spirit. This alkalisied spirit is called TARTARISED SPIRIT OF WINE.

The process here described, which was long since recommended by Dr Lewis, will sufficiently explain the intention of the London college, in the directions they have now given for the preparation of alcohol ; and there can be no doubt, that by their process a very pure alcohol may be obtained. Of this we have a sufficient test in the specific gravity of the fluid, which is to that of distilled water only as 815 to 1000, while the specific gravity of rectified spirit, is as 835 to 1000.

SPIRITUS ÆTHERIS VITRIOLICI.

Lond.

Spirit of vitriolic Ether.

Take of

Rectified spirit of wine,

Vitriolic acid, each one pound.

Pour by a little at a time the acid on the spirit, and mix them by shaking ; then from a retort through a tubulated receiver, to which another recipient is fitted, distil the spirit of vitriolic ether till sulphureous vapours begin to rise. If you continue the distillation, applying a fresh receiver, a portion of oil or wine will be obtained, which preserve for use.

SPIRITUS ÆTHERIS VITRIOLICI, vulgo SPIRITUS VITRIOLI DULCIS.

Edin.

Spirit of vitriolic Ether, commonly called Dulcified spirit of Vitriol.

Take of

Vitriolic ether, one part ;

Rectified spirit of wine, two parts.

Mix them.

THE last of these processes is a very ready and convenient method of preparing the dulcified spirit of vitriol, which only differs from ether by the acid being less predominant, and less intimately combined.

In the first process, the most convenient way of mixing the ingredients is to put the spirits into the retort first, and with a long tubed funnel reaching down to the bottom of the retort to pour in the acid : by cautious agitation the two fluids unite, and a heat is produced, which may be taken advantage of in the distillation, if we have a sand bath previously heated to the same degree, to set the retort into immediately after the mixture is completed ; nor is there any occasion for a tubulated receiver, if we immerse the ordinary receiver, which ought to be large, in water, or bury it in broken Ice. See ÆTHER VITRIOLICUS, *Edinb.*

The distillation should be performed with an equal and very gentle heat, and not continued so long as till a black froth begins to appear : for before this time, a liquor will arise of a very different nature from the spirits here intended. The juncture of the retort and recipient is to be luted with a paste made of linseed meal, and

and further secured by a piece of wet bladder.

The true dulcified spirit arises in thin subtle vapours, which condense on the sides of the recipient in straight stræ. It is colourless as water, very volatile, inflammable, of an extremely fragrant smell, and in taste somewhat aromatic.

After the fire has been kept up for some time, white fumes arise; which either form irregular stræ, or are collected into large round drops like oil: On the first appearance of these, the receiver must be taken away. If another be substituted, and the distillation continued, an acid liquor comes over, of an exceeding pungent smell like the fumes of burning brimstone. At length a black froth hastily begins to arise, and prevents carrying the process farther.

A small quantity of oil of a light yellow colour, a strong, penetrating, and very agreeable smell, is found swimming on the surface of the sulphureous spirit. This oil seems to be nearly of the same nature with the essential oils of vegetables. It readily and totally dissolves in rectified spirit of wine, and communicates to a large quantity of that menstruum the taste and smell of the aromatic or dulcified spirit.

The matter remaining after the distillation is of a dark blackish colour, and still highly acid. Treated with fresh spirit of wine, in the same manner as before, it yields the same production; till at length all the acid that remains unvolatilised being saturated with the inflammable oily matter of the spirit, the compound proves a bituminous sulphureous mass: which

exposed to the fire in open vessels, readily burns, leaving a considerable quantity of fixed ashes; but in close ones, it explodes with violence; with fix alkaline salts, it forms a compound nearly similar to one composed of alkalis and sulphur.

The new name adopted by the London and Edinburgh colleges for this fluid, are expressive of its composition, the old term of *Spiritus vitrioli dulcis* is less properly fitted to distinguish it from other fluids, and to convey a just idea of its nature.

Dulcified spirit of vitriol has been for some time greatly esteemed, both as a menstruum and a medicine. It dissolves some resinous and bituminous substances more readily than spirit of wine alone, and extracts elegant tinctures from sundry vegetables. As a medicine, it promotes perspiration and the urinary secretion, expels flatulencies, and in many cases abates spasmodic strictures, eases pains, and procures sleep. The dose is from ten to eighty or ninety drops in any convenient vehicle. It is not essentially different from the celebrated anodyne liquor of Hoffman; for which it is, by the author himself, frequently directed as a succedaneum.

Of this fluid, however, or at least of an article probably still more nearly resembling it, we shall afterwards have occasion to speak, when we treat of the *Spiritus ætheris vitriolici vinosus*.

ETHER VITRIOLICUS.

Lond.

Vitriolic Ether.

Take of

The spirit of vitriolic ether, two pounds;

Water of pure kali one ounce.

Shake them together, and distil, with a gentle heat, fourteen ounces by measure.

ETHER VITRIOLICUS.

Edin.

Vitriolic Ether.

Take of

Rectified spirit of wine,

Vitriolic acid, of each thirty-two ounces.

Pour the spirit into a glass retort fit for sustaining a sudden heat, and add to it the acid in an uniform stream. Mix them by degrees, frequently shaking them moderately; this done, instantly distil from sand previously heated for that purpose, into a receiver kept cool with water or snow. The heat is to be so managed, that the liquor shall boil at first, and continue to boil till sixteen ounces are drawn off; then let the retort be raised out of the sand.

To the distilled liquor add two drachms of the strongest common caustic: then distil again in a very high retort with a very gentle heat, into a cool receiver, until ten ounces have been drawn off.

If sixteen ounces of rectified spirit of wine be poured upon the acid remaining in the retort after the first distillation, an ethereal liquor may be obtained by another distillation. This may be done pretty often.

THE preparation of this singular fluid, now received into public pharmacopœias, was formerly confined to a few hands: for though several processes have been published for obtaining it, the success of most of them is precarious, and some of them are accompanied also with danger to the operator. The principal difficulty consists in the first part of the distillation.

It has been usual to direct the heat to be kept up till a black froth begins to appear: but if it is managed in the manner here directed, the quantity of ether which the liquor can afford will be formed and drawn off before this sulphureous froth appears. The use of the caustic alkali is to engage any uncombined vitriolic acid which may be present in the first distilled liquor. If a mild alkali were employed for this purpose, the separation of its air by the acid might endanger the bursting of the vessels. This last is indeed an inconvenience which attends the whole of this process. It might in a great measure be obviated by employing a range of receivers or *adapters*.

The ether, or ethereal spirit, is the lightest, most volatile and inflammable, of all known liquids. It is lighter than the most highly rectified spirit of wine, in the proportion of about 7 to 8: a drop, let fall on the hand, evaporates almost in an instant, scarcely rendering the part moist. It does not mix, or only in a small quantity, with water. Spirit of wine, alkaline lixivæ, volatile alkaline spirits, or acids; but is a powerful solvent of oils, balsams, resins, and other analogous substances. It is the only known substance capable of dissolving the *elastic gum*. It has a fragrant odour, which, in consequence

quence of the volatility of the fluid, is diffused, through a large space. It has often been found to give ease in violent headachs, by being applied externally to the part; and to relieve the toothach, by being laid on the afflicted jaw. It has been given also internally, with benefit, in hooping coughs, hysterical cases, in asthma, and indeed in almost every spasmodic affection, from a few drops to the quantity of half an ounce, in a glass of wine or water; which should be swallowed as quick as possible, as the ether so speedily exhales.

SPIRITUS ÆTHERIS NITROSI.

Lond.

Spirit of nitrous Ether.

Take of

Rectified spirit of wine, two pints;

Nitrous acid, half a pound.

Mix them, by pouring in the acid on the spirit, and distil with a gentle heat one pound ten ounces.

SPIRITUS ÆTHERIS NITROSI, vulgo SPIRITUS NITRI DULCIS.

Edinb.

Spirit of nitrous Ether, commonly called Dulcified Spirit of Nitre.

Take of

Rectified spirit of wine, three pounds;

Nitrous acid, one pound.

Pour the spirit into a capacious phial, placed in a vessel full of cold water, and add the acid by degrees, constantly agitating them. Let the phial be slightly covered, and set by for seven days in a cool place; then distil

the liquor, with the heat of boiling water, into a receiver kept cool with water or snow, till no more spirit comes over.

By allowing the acid and rectified spirit to stand for some time, the union of the two is not only more complete, but the danger also of the vessels giving way, in consequence of the ebullition and heat produced by mixing the ingredients, is in a great measure prevented. By fixing the degree of heat to the boiling point, the superabundant acid matter is left in the retort, being too ponderous to be raised by that degree of heat.

Here the operator must take care not to invert the order of mixing the two liquors, by pouring the spirit into the acid; for if he should, a violent effervescence and heat would ensue, and the matter be dispersed in highly noxious red fumes.

Several methods have been contrived for obviating the inconveniences arising from the elastic fluid and violent explosions produced on the mixture of the nitrous acid and rectified spirit of wine: Dr Black's, which is the best, is to put the spirit into a strong vial, so large as that the spirit may fill about a fourth part of it, and plunge it into a large vessel containing water with some ice among it; have the nitrous acid in a vial also plunged among the ice and water: when both have remained in this state for an hour or two, the acid may be poured into the spirit by little and little, plunging the vial into the ice and water after every fresh addition of acid. The vial containing the spirit must be stopp'd with a conical stopper, and this stopper confined to its place by a weak spring. When

all the acid is added to the spirit, the vial must remain in the ice and water for a day or two, and then set in a cool place for a week; when the ether will be found floating on the watery liquor below it. The distillation should be performed with a very slow and well regulated fire; otherwise the vapour will expand with so much force as to burst the vessels. Wilston seems to have experienced the justness of this observation, and hence directs the juncture of the retort and receiver not to be luted, or but slightly: if a tubulated recipient, with a sufficiently long pipe, be used, and the distillation, performed with the heat of a water-bath, the vessels may be luted without any danger.

Dulcified spirit of nitre has been long deservedly held in great esteem. It quenches thirst, promotes the natural secretions, expels flatulencies, and moderately strengthens the stomach: it may be given in doses of from twenty drops to a drachm, in any convenient vehicle. Mixed with a small quantity of *Spiritus ammoniacus*, it proves a mild, yet efficacious, diaphoretic, and often remarkably diuretic; especially in some febrile cases, where such a salutary evacuation is wanted. A small proportion of this spirit added to malt spirits, gives them a flavour approaching to that of French Brandy.

SPIRITUS AMMONIÆ.

*Lond.**Spirit of Ammonia.*

Take of

Proof-spirit, three pints;

Sal ammoniac, four ounces;

Pot-ash, six ounces.
Mix and distil with a slow fire one pint and an half.

SPIRITUS AMMONIÆ, vulgo
SPIRITUS SALIS AMMONIACI VINOSUS.

Edin.

Spirit of Ammoniac, commonly called Vicous spirit of Sal Ammoniac.

Take of

Proof-spirit, four pounds;

Sal ammoniac, four ounces;

Purified lixive, six ounces.

Mix them, and by distillation with a gentle heat, draw off two pounds.

THIS spirit has lately come much into esteem, both as a medicine and a menstruum. It is a solution of volatile salt in rectified spirit of wine; for though proof-spirit be used, its phlegmatic part does not rise in the distillation, and serves only to facilitate the action of the pure spirit on the ammoniacal salt. Rectified spirit of wine does not dissolve mild volatile alkaline salts by simple mixture: on the contrary, it precipitates them, as has been already observed, when they are previously dissolved in water: but by the present process, a considerable proportion of the volatile alkali is combined with the spirit. It might perhaps, for some purposes, be more advisable to use with this intention the volatile spirit made with quicklime; for this may be mixed at once with rectified spirit of wine, in various proportions, without the least danger of any separation of the volatile alkali. The name here employed by both the colleges, particularly when put

put in contradiction to the *aqua ammoniac*, conveys a clear idea of the article.

As a menstruum, the *spiritus ammoniac* is employed to dissolve essential oils, thus forming the *spiritus volatilis aromaticus*, or *spiritus ammoniac compositus*, which again is employed in making the tinctures of guaiac, valerian, &c.

The chief medical virtues which the *spiritus ammoniac* possesses, when exhibited by itself, are those of the volatile alkali.

SPIRITUS AMMONIÆ FETIDUS.

Lond.

Fetid Spirit of Ammonia.

Take of

Proof-spirit, six pints;

Sal ammoniac, one pound;

Asafetida, four ounces;

Pot-ash, one pound and a half.

Mix them, and draw off by distillation five pints, with a slow fire.

Edinb.

Take of

Spirit of ammonia, eight ounces:

Asafetida, half an ounce.

Digest in a close vessel twelve hours; then distil off, with the heat of boiling water, eight ounces.

THIS spirit, the last formula of which is the best, as being most easily prepared, is designed as an antihysteric, and is undoubtedly a very elegant one. Volatile spirits, impregnated for their purposes with different fetids, have been usually kept in the shops; the ingredient here chosen, is the best

calculated of any for general use, and equivalent in virtue to them all. The spirit is pale when newly distilled, but acquires a considerable tinge in keeping.

SPIRITUS ANISI COMPOSITUS.

Lond.

Compound Spirit of Aniseed.

Take of

Aniseed,

Angelica-seed, of each, bruised, half a pound;

Proof-spirit, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon by distillation.

THIS compound spirit is now directed to be prepared by the London college in the same manner as in their former edition. It has no place in the Edinburgh pharmacopœia; but it may justly be considered as a very elegant water. The angelica seeds greatly improve the flavour of the anise. It is often employed with advantage, particularly in cases of flatulent cholick; but it has been alleged to be sometimes too frequently used with this intention as a domestic medicine, especially by old ladies: for unless it be prudently and cautiously employed, it may soon be attended with all the pernicious consequences of dram-drinking.

SPIRITUS CARUL.

Lond.

Spirit of Caraway.

Take of

Caraway seeds, bruised, half a pound;

Proof-

Proof-spirit, one gallon ;
Water, sufficient to prevent an
empyreuma.

Draw off one gallon.

SPIRITUS CARVI, vulgo A-
QUA CARVI SPIRITUO-

SA.

Edin.

*Spirit of caraway, commonly called
Spiritus caraway water.*

Take of

Caraway-seeds, half a pound ;

Proof-spirit, nine pounds.

Macerate two days in a close ves-
sel ; then pour on as much wa-
ter as will prevent an empyreu-
ma, and draw off by distillation
nine pounds.

By this process the spirit ob-
tains, in great perfection, the fla-
vour of the caraway-seeds ; and
it is a cordial frequently used.

SPIRITUS CINNAMOMI.

Lond.

Spirit of Cinnamon.

Take of

Bruised cinnamon, one pound ;

Proof-spirit, one gallon ;

Water, sufficient to prevent an
empyreuma.

Draw off one gallon.

SPIRITUS CINNAMOMI.

Edinb.

Spirit of Cinnamon.

From one pound of cinnamon,
nine pounds of spirit are to be
drawn off, in the same manner
as in the spirit of caraway.

This is a very agreeable and
useful cordial, but not so strong
of the cinnamon as might be ex-
pected ; for very little of the

virtues of the spice arises till after
the pure spirituous part has distil-
led. Hence in the former edi-
tions of the London Pharmacopœia,
the distillation was ordered
to be protracted till two pints
more than here directed were
come over. By this means, the
whole virtue of the cinnamon was
more frugally than judiciously
obtained ; for the disagreeable
flavour of the feints of proof
spirits, and the acidulous liquor
arising from cinnamon as well as
other vegetables when their dis-
tillation is long continued, give
an ill relish to the whole ; at the
same time that the oil which was
extracted from the spice was by
this acid thrown down.

In the Pharmacopœia Refor-
mata, it is proposed to make this
spirit by mixing the aqua cin-
namomi simplex with somewhat
less than an equal quantity of
rectified spirit : on shaking them
together, the liquor loses its milky
hue, soon becomes clear, and more
elegant than the spirit distilled as
above : it is equally strong of the
cinnamon, and free from the nau-
seous taint with which the com-
mon proof spirits are impregnat-
ed.

SPIRITUS JUNIPERI COM-
POSITUS.

Lond.

Compound Spirit of Juniper.

Take of

Juniper-berries, bruised, one
pound ;

Caraway-seeds, bruised,

Sweet-fennel seeds, of each one
ounce and an half ;

Proof spirit, one gallon ;

Water, sufficient to prevent an
empyreuma.

Draw off one gallon.

SPI-

SPIRITUS JUNIPERI COM-
POSITUS, vulgo AQUA
JUNIPERI COMPOSITA.

Edinb.

*Compound Spirit of Juniper, com-
monly called Compound Juniper
water.*

Take of

Juniper-berries, well bruised,
one pound;

Caraway seeds,

Sweet fennel seeds, each one
ounce and a half;

Proof-spirit, nine pounds.

Macerate two days; and having
added as much water as will
prevent an empyreuma, draw
off by distillation nine pounds.

THIS spirit, mixed with
about an equal quantity of the
rob of juniper-berries, proves an
useful medicine in catarrhs, de-
bility of the stomach and intes-
tines, and scarcity of urine. The
water by itself is a good cordial
and carminative; the service which
this and other spirits do with these
intentions is commonly known;
though the ill consequences that
follow from their constant use are
too little regarded.

SPIRITUS LAVENDULÆ.

Lond.

Spirit of Lavender.

Take of

Fresh flowers of lavender, one
pound and an half;

Proof-spirit, one gallon.

Draw off by distillation, in a wa-
ter bath, five pints.

SPIRITUS LAVENDULÆ
SIMPLEX.

Edinb.

Simple Spirit of Lavender.

Take of

Flowering spikes of fresh la-
vender, two pounds;

Rectified spirit of wine, eight
pounds.

Draw off by the heat of boiling
water, seven pounds.

THIS spirit, when made in per-
fection, is very grateful and fra-
grant: It is frequently rubbed
on the temples, &c. under the
notion of refreshing and comfort-
ing the nerves; and it probably
operates as a powerful stimulus to
their sensible extremities; it is
likewise taken internally, to the
quantity of a tea-spoonful, as a
warm cordial.

SPIRITUS MENTHÆ PIPE-
RITIDIS.

Lond.

Spirit of Peppermint.

Take of

The herb peppermint, dried,
one pound and an half;

Proof spirit, one gallon;

Water, sufficient to prevent an
empyreuma.

Draw off one gallon.

SPIRITUS MENTHÆ PIPE-
RITIDIS.

Edinb.

Spirit of Peppermint.

From a pound and an half of these
leaves, nine pounds of spirit are
drawn off, as from the caraway-
seeds.

THIS spirit receives a strong
impregnation from the pepper-
mint.

mint. It is employed in flatulent colics and similar disorders; and in these it sometimes gives immediate relief: but where it is indicated, there are few cases in which the peppermint water is not preferable.

SPIRITUS MENTHÆ SATI-

VÆ.

Lond.

Spirit of Spearmint.

Take of

Spearmint, dried, one pound and an half;

Proof-spirit, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

This spirit has no place in the Edinburgh pharmacopœia. It is, however, a very elegant one, and preferable, in weakness of the stomach, retching to vomit, and the like, to many more elaborate preparations. Where the disorder is not accompanied with heat or inflammation, half an ounce of this spirit may be given diluted with some agreeable aqueous liquor: but, as was already observed with regard to the preceding article, there are many cases in which the prudent practitioner will be disposed to give the preference to the simple distilled water.

SPIRITUS NUCLEI FRUCTUS MYRISTICÆ NUCIS MOSCHATÆ.

Lond.

Spirit of Nutmeg.

Take of

Bruised nutmegs, two ounces;

Proof-spirit, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

SPIRITUS NUCIS MOSCHATÆ.

Edinb.

Spirit of Nutmeg.

From two ounces of the nutmeg well bruised, nine pounds of spirit are to be drawn off as from caraway-seeds.

THIS is an agreeable spirituous liquor, highly impregnated with the nutmeg flavour. It was formerly celebrated in nephritic disorders, and when combined with a few hawthorn flowers, it had even the title of *aqua nephritica*. At present it is employed only as a cordial liquor, and is not even very frequently in use.

SPIRITUS PIMENTO.

Lond.

Spirit of Pimento, or All-spice.

Take of

All-spice, bruised, two ounces;

Proof spirit, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

Edin.

From half a pound of pimento, nine pounds of spirit are to be drawn off as from caraway-seeds.

THIS spirit is far more agreeable than a simple water drawn from the same spice: and had long a place among the cordials of the distiller, before it was received into any public pharmacopœia; but although now adopted both

both by the London and Edinburgh colleges, it is not very frequently ordered from the shops of the apothecary.

SPIRITUS PULEGII.

Lond.

Spirit of Penny-royal.

Take of

The herb penny-royal, dried,
one pound and an half ;

Proof-spirit, one gallon ;

Water, sufficient to prevent an
emphyreuma.

Draw off one gallon.

THIS spirit has no place in the Edinburgh pharmacopœia. It possesses, however, a considerable share of the flavour of the penny-royal, and is very frequently employed as a carminative and antihysteric.

SPIRITUS RAPHANI COMPOSITUS.

Lond.

Compound spirit of Horfe-radish.

Take of

Fresh horfe-radish root,
Dried outer-rind of Seville oranges, each two pounds ;

Fresh herb of garden scurvy-grass, four pounds ;

Bruised nutmegs, one ounce ;

Proof spirit, two gallons ;

Water, sufficient to prevent an
emphyreuma.

Draw off two gallons.

THIS spirit has long been considered as an elegant one, and is perhaps as well adapted for the purposes of an antiscorbutic as any thing that can be contrived in this form. It has been alleged, that the horfe-radish and scurvy-grass join very well together, giv-

ing a similar flavour, though not a little disagreeable ; that the nutmeg suppresses this flavour very successfully, without superadding any of its own, and that to this orange peel adds a flavour very agreeable. Arum root had formerly a place in this water, but is here deservingly thrown out ; for it gives nothing of its pungency by distillation, notwithstanding what is asserted by some pharmaceutical writers to the contrary. Mustard seed, though not hitherto employed in these kinds of compositions, would seem to be an excellent ingredient ; it gives over the whole of its pungency, and is likewise less perishable than most of the other substances of this class ; this seed wants no addition, excepting some aromatic material to furnish an agreeable flavour.

Although this process may furnish an agreeable compound spirit, yet it is much to be doubted, whether it possesses those antiscorbutic powers for which it was once celebrated ; and with this intention the Edinburgh college place so little confidence in it, that they have now rejected it from their pharmacopœia.

SPIRITUS RORISMARINI.

Lond.

Spirit of Rosemary.

Take of

Fresh tops of rosemary, one
pound and an half ;

Proof-spirit, one gallon.

Distil in a water bath, five pints.

Eainb.

Take of

Fresh flowering tops of rosemary two pounds ;

Rectified

Rectified spirit of wine, eight pounds.

Distil in the heat of boiling water till seven pounds come over.

A spirit similar to this is generally brought to us from abroad, under the name of Hungary water.

This spirit is very fragrant, so as to be in common use as a perfume: that brought from abroad is superior in fragrance to such as is generally made among us. In order to prepare it in perfection, the vinous spirit should be extremely pure; the rosemary tops gathered when the flowers are full blown upon them, and committed immediately to distillation, care being taken not to bruise or press them. The best method of managing the distillation, is that which was formerly recommended for the distillation of the more volatile essential oils and simple waters, viz. first to place the spirit in the still, and then let it, above the liquor, either an iron hoop, with a hair-cloth stretched over it, upon which the flowers are to be lightly spread, or rather a basket, supported on three pins, reaching down to the bottom. A gentle heat being applied just sufficient to raise the spirit, its vapour lightly percolating through the flowers, will imbibe their finer parts, without making that disagreeable alteration, which liquors applied to such tender subjects, in their grosser form, generally do. Probably the superiority of the French Hungary water, to that prepared among us, is owing to some skilful management of this kind, or to employing a perfectly pure spirit.

In the Wirtemberg pharmacopœia, some sage and ginger are added, in the proportion of half a

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pound of the former, and two ounces of the latter, to four pounds of the rosemary; but the peculiar agreeable flavour of this water depends on the rosemary alone.

AQUA CARMELITANA.

Dan.

Carmelite Water, or compound Balm Water.

Take of

Fresh-gathered leaves of balm, a pound and a half;

The recent yellow rind of lemons, four ounces;

Nutmeg,

Coriander, each two ounces;

Cloves,

Cinnamon, each one ounce.

The ingredients being sliced and bruised, pour upon them;

Rectified spirit of wine, six pounds;

Balm water, three pounds.

Digest for three days; then draw off six pounds by distillation.

THIS spirit has been a good deal celebrated, particularly among the French, under the title of *Eau de Carmes*. Mr Baumé, in his *Éléments de Pharmacie*, proposes some improvements on the process. After the spirit added to the ingredients has been drawn off in the heat of a water-bath, he orders the distilled liquor to be rectified by a second distillation, drawing off somewhat less than nine-tenths of it. He recommends, that all the aromatic spirits should be prepared in the same manner. When the common spirits of this kind are rubbed between the hands, they leave, after the more volatile parts have exhaled, a disagreeable empyreumatic smell; and when diluted with water, and taken medicinally, they leave in like manner a nauseous

ous flavour in the mouth. To remedy these imperfections, he made many experiments, which shewed, that in order to obtain these liquors of the desirable qualities, the spirit must not only be perfectly pure at first, but that the liquor ought also to be rectified after it has been distilled from the subjects. In this rectification, only the more volatile, subtile, aromatic parts of the ingredients arise: there remains behind a white liquor, acrid, bitter, loaded only with the grosser oil, and deprived of all the specific flavour of the subjects. Indeed the very imperfection complained of, naturally points out this second distillation as the remedy; for it shews the spirit to contain a grateful and ungrateful matter; the first of which exhales, while the other is left behind. The author says, that when the *aqua melissa* is prepared as above directed, it has something in it more perfect than any of the odorous spirits, whose excellence is cried up, and which have the reputation of being the best.

Aromatic spirituous liquors have in general less smell, when newly distilled, than after they have been kept about six months. Mr Bauné suspects that the preparations of this kind, which have been most in vogue, were such as have been thus improved by keeping: and found that the good effects of age might be produced in a short time by means of cold. He plunges quart bottles of the liquor into a mixture of pounded ice and sea salt: the spirit after having suffered, for six or eight hours, the cold thence resulting, proves as grateful as that which has been kept for several years. Simple waters also, after being frozen, prove far more agreeable than they were before,

though they are always less so than those which have been drawn with spirit, and exposed to a like degree of cold. This melioration of distilled waters by frost was taken notice of by Geoffroy.

SPIRITUS COCHLEARIE.

Succ.

Spirit of Scurvygrass.

Take of

Fresh scurvygrafs, bruised, ten pounds;

Rectified spirit of wine, eight pounds.

With the heat of a water bath, distil off four pounds.

THIS spirit is very strong of the scurvygrafs; and has been given, in those cases where the use of this herb is proper, in doses of from twenty to one hundred drops. The virtues of scurvygrafs reside in a very subtile, volatile oil, which arises in distillation both with water and pure spirit; and if the liquors are exposed to the air, soon exhales from both. The spirit, newly distilled, is extremely pungent; but if long kept, even in close vessels, it becomes remarkably less so.

The makers of this spirit have frequently added to the scurvygrafs a quantity of horse-radish root, and sometimes substituted for it one drawn entirely from the horse-radish: the flavour of these two simples being so much alike, that their distilled spirits are scarcely distinguishable from each other.

SPIRITUS AURANTII.

Succ.

Spirit of Orange-peel.

Take of

Recent orange peel, one pound; Proof-

Proof-spirit, three pounds.

Draw off two pounds by the heat of a water-bath.

THIS spirit, which is now rejected from our pharmacopœias, had formerly a place in them under the title of *aqua coricum aurantiorum spirituosâ*. It is considerably stronger of the orange-peel than the simple water; and is an useful cordial, stomachic, and carminative.

SPIRITUS AROMATICUS.

Succ.

Aromatic Spirit.

Take of

The tops of rosemary, a pound and an half;

Tops of milfoil,

Thyme, each half a pound;

Proof-spirit, sixteen pounds.

Macerate for two days, and draw off by distillation, eight pounds.

If to this quantity of spirit four pounds of vinegar be added, it forms the *spiritus aromaticus acetatus*.

THIS preparation does not differ materially from the spirit of rosemary or Hungary water; for on the essential oil of the rosemary its medicinal properties may be

considered as chiefly depending. It is often employed, particularly for external purposes, and for impregnating the air with its vapours, to destroy the influence of febrile contagions.

SPIRITUS ANICTERICUS.

Gen.

Anticteric Spirit.

Take of

Spirit of turpentine, an ounce and an half;

Rectified spirit of wine, half a pound.

Distil with a gentle heat. Let the oil swimming above in the receiver be separated from the saturated spirit, which is to be preserved for use.

It has been imagined, that this combination of oil of turpentine with ardent spirit will furnish an effectual solvent for biliary calculi: hence the origin of the name here given it. But although it may have such an effect when copiously applied to the calculi in a glass vessel; yet this is not to be expected when it is taken into the stomach, and can only reach them in the course of circulation.

C H A P. XX.

DECOCTA ET INFUSA.

DECOCTIONS AND INFUSIONS.

WATER, the direct menstruum of gums and salts, readily extracts the gummy and saline parts of vegetables. Its action, however, is not limited to these; the resinous and oily principles being, in most vegetables, so intimately blended with the gummy and saline, as to be in part taken up along with them: some of the resinous cathartics, and most of the aromatic herbs, as well as bitters and astringents, yield to water the greatest part of their smell, taste, and medicinal virtue. Even of the pure essential oils, and odorous resins of vegetables, separated from the other principles, water imbibes a part of the flavour; and by the artificial admixture of gummy or saline matter, the whole substance of the oil or resin is made soluble in water.

Of pure salts, water dissolves only certain determinate quantities: by applying heat, it is generally enabled to take up more than it can do in the cold, and this in proportion to the degree of heat; but as the liquor cools, this addition

tional quantity separates, and the water retains no more than it would have dissolved without heat. With gummy substances, on the other hand, it unites unlimitedly, dissolving more and more of them till it loses its fluidity. Heat expedites the action of the water on gum, but cannot enable it to take up more than it would do by allowing it longer time in the cold. The active parts extracted from most vegetables by water, and oils and resins made soluble in water by the artificial admixture of gum, partake of this property of pure gums, being soluble without any limitation.

It has been imagined, that vegetables in a fresh state, while their oily, resinous, and other active parts, are already blended with a watery fluid, would yield their virtues to water more freely and more plentifully, than when their native moisture has been dissipated by drying. Experience, however, shews, that dry vegetables in general give out more than fresh ones, water seeming to have little action upon

upon them in their recent state. If, of two equal quantities of mint, one be infused fresh in water, and the other dried, and then infused in the like quantity of water for the same length of time, the infusion of the dry herb will be remarkably the strongest; and the case appears to be the same in all the vegetables that have been tried.

In all the preparations described in this chapter, it is to be understood that the subjects *must* be moderately and newly dried unless when they are expressly ordered to be taken fresh; in which case, their virtues are supposed to be destroyed or impaired by drying.

The native colours of many vegetables are communicated to water along with their medicinal matter; many impart a colour different from their own: and others, though of a beautiful and deep colour themselves, give scarcely any to the menstruum. Of the first kind are the yellow and red flowers; of the second, the leaves of most plants; of the third, some of the blue flowers, as those of cyamus and larkspur. Acid liquors change the infusions of most flowers, the yellow ones excepted, to a red; and alkalies, both fixed and volatile, to a green.

From animal substances, water extracts the gelatinous and nutritious parts; whence glues, jellies, broths, &c; and along with these, it takes up principles of more activity, as the acrid matter of cantharides. It dissolves also some portion of calcined calcareous earth, but has little or no action on any other kind of earthy matter.

The effect of boiling differs

from that of infusion in some material particulars. One of the most obvious differences is, that as the essential oils of vegetables, in which their specific odours reside, are volatile in the heat of boiling water, they exhale in the boiling along with the steam, and are thus lost, whereas both in cold, and sometimes in hot infusions, they are preserved; although in the latter they are by no means perfectly so. Odorous substances, and those in general whose virtues depend on their volatile parts, are therefore unfit for this treatment. The volatile parts of these may, nevertheless, be united in this form with those bodies of a more fixt nature, by boiling the latter till their virtues be sufficiently extracted, and then infusing the former in this decoction.

The extraction of the virtue of the subject is usually promoted or accelerated by a boiling heat; but this rule is less general than it is commonly supposed to be. We have already observed, that Peruvian bark gives out its virtue more perfectly by cold infusion than by coction. In some cases, boiling occasions a manifest division of the principles of the subject; thus, when almonds are triturated with cold water, their oil, blended with the mucilaginous or other soluble matter of the almond, unites with the water, into a milky liquor called an emulsion: but on boiling them in water, the oil separates and rises to the surface; and if the most perfect emulsion be made to boil, a like separation happens.

This also appears to take place, though in a less evident manner, in boiling sundry other vegetables; thus tobacco, asarum, an ipecacuanha, lose their active powers by boiling:

boiling: nor does it appear that this change is effected merely by the discharge of volatile parts. From some late experiments, it has been found, that the distilled water of *ipeacacuanha* was infinitely less emetic than the infusion from which it was distilled, and that the boiling liquor gradually assumes a black colour, indicating some kind of decomposition of parts; the same circumstances probably take place in boiling all vegetables whatever, though from their not producing such sensible operations on the living body, they cannot be so clearly discovered as in *ipeacacuanha*, tobacco, or asarum.

Vinegar extracts the virtues of several medicinal substances in tolerable perfection; but at the same time its acidity makes a remarkable alteration in them, or superadds a virtue of a different kind: and hence it is more rarely employed with this intention than purely aqueous or spirituous menstrua. Vinegar however for particular purposes, excellently assists, or coincides with the virtues of some drugs, as squills, garlic, ammoniacum, and others: and in many cases where this acid is itself principally depended on, it may be advantageously impregnated with the flavour of certain vegetables: Most of the odoriferous flowers impart to it their fragrance, together with a fine purplish or red colour; violets, for instance, if fresh parcels of them are infused in vinegar in the cold for a little time, communicate to the liquor a pleasant flavour, and bright purplish red colour. Vinegar, like other acids, added to watery infusions or decoctions, generally precipitates a part of what the water had dissolved.

DECOCTUM ALTHEÆ.

Elinb.

Decoction of Marsh-mallows.

Take of

Dried marsh-mallow roots, four ounces;

Raisins stoned, two ounces;

Water, seven pounds.

Boil to five pounds; set apart the strained liquor till the seeds have subsided; then pour off the clear liquor.

THE Edinburgh college have substituted this for the more complicated formula of the *Decoctum ad Nephriticos* of their former pharmacopœia, and it fully answers the intentions of that preparation: it is intended chiefly as an emollient, to be liberally drank in nephritic paroxysms: in which cases, by softening and relaxing the parts, it frequently relieves the pain, and procures an easy passage for the fabulous matter. This medicine is now made more simple than before, without any diminution of its virtue, by the rejection of wild-carrot seed, retharrow root, figs, linseed, and liquorice. The carrot seeds were indeed unfit for this form, as they give out little of their virtue to watery liquors.

DECOCTUM CORNU CER.

Vi.

Lond.

Decoction of Hartshorn.

Take of

Burnt and prepared hartshorn, two ounces;

Gum arabic, six drachms;

Distilled water, three pints.

Boil, constantly stirring, to two pints; and strain.

Tas

THIS decoction is used as common drink in acute diseases attended with a looseness, and where acrimonious humours abound in the primæ viæ. The gum is added, in order to render the liquor slightly glutinous, and thus enable it to sustain more of the earth. It may be observed, that the water is not enabled by the boiling to dissolve any part of the calx; and that in the decoction, the earth is only diffused in substance through the water, as it would be by agitation.

For these reasons, this formula is now rejected by the Edinburgh college, notwithstanding the reputation in which it was held by Dr Sydenham, and other names of the first eminence. But as an absorbent of a similar nature, the Edinburgh college have introduced the *Potio cretacea*, for which see chapter 23.

DECOCTUM CINCHONÆ, sive CORTICIS PERUVIANI.

Lond Edin.

Decoction of Peruvian bark.

Take of

Peruvian bark, powdered, one ounce;

Distilled water, one pint and three ounces *Lond*; a pound and an half *Edin.*

Boil for ten minutes, in a covered vessel, and strain the liquor while hot.

ALTHOUGH a cold watery infusion of bark is in general preferable to any decoction, yet this form has at least the advantage of being more quickly prepared; and the decoction here directed, which is boiled only for a short

time, and strained while hot, is preferable to any other.

This decoction should be passed only through a coarse strainer and drank while turbid; if suffered to stand till clear, the more efficacious parts of the bark will subside. We have formerly observed, that the virtues of this drug consist chiefly in its resinous substance, which though it may be totally melted out by the heat of boiling water, remains only partially suspended in that menstruum.

DECOCTUM PRO ENE- MATE.

Lond.

Decoction for a Glyster.

Take of

The dried leaves of mallow, one ounce;

Dried chamomile-flowers, half an ounce;

Water, one pint.

Boil, and strain.

THE title of this decoction sufficiently expresses its use, as the basis of glysters. The ingredients should be very slightly boiled, or at least the chamomile flowers not be put in till towards the end, a part of their virtue being soon lost by boiling.

DECOCTUM PRO FOMEN- TO.

Lond.

Decoction for Fomentation.

Take of

The dried leaves of southern-wood,

The dried tops of sea worm-wood, Dried chamomile flowers, each one ounce:

Dried laurel leaves, half an ounce; Distilled

Distilled water, six pints.
Boil them a little, and strain.

DECOCTUM CHAMOMELI,
vulgo **DECOCTUM COM-**
MUNE.

Edinb.

*Decoction of chamomile, commonly
called Common Decoction.*

Take of

Chamomile-flowers, one ounce;
Caraway seeds, half an ounce;
Water, five pounds.
Boil for a quarter of an hour, and
strain.

This decoction is intended to
answer the purposes of both the
foregoing.

It must however be acknowl-
ged, that these impregnations are
for the most part unnecessary for
the purpose of glysters; and in
ordinary cases the weight of the
water usually solicits a discharge
before these medicines can pro-
duce any effect.

As fomentations, their virtues
are also in a great measure to
be ascribed to the influence of the
warm water: and when the herbs
themselves are applied, they act
only as retaining heat and moisture
for a longer time.

DECOCTUM GEOFFRÆ.

Edin.

Decoction of cabbage tree.

Take of

Bark of the cabbage tree, pow-
dered, one ounce;
Water, two pounds.
Boil it with a gentle fire down to
one pound, and strain.

THE medicinal qualities of the
geoffræa have been amply treated
of in the materia medica, to which

the reader is referred. As it is
a very violent medicine, the prac-
titioner ought to be on his guard
against giving it in too large a dose,
especially at first.

DECOCTUM HELLEBORI
ALBI.

Lond.

Decoction of White Hellebore.

Take of

The root of white hellebore,
powdered, one ounce;
Distilled water, two pints;
Rectified spirit of wine, two
ounces.

Boil the water with the root to
one pint; and, the liquor being
cold and strained, add to it the
spirit.

WHITE hellebore, as we former-
ly observed, is now very rarely
employed internally; and the
present formula is entirely intend-
ed for external use. Recourse is
sometimes had to it with advan-
tage in cutaneous eruptions, par-
ticularly in tinea capitis. But
where the incrustations are entire-
ly removed, leaving a very tender
skin, it is necessary that the de-
coction should be diluted previously
to its employment.

DECOCTUM HORDEI.

Lond. Edin.

Decoction of Barley.

Take of

Pearl-barley, two ounces;
Distilled water, four pints.
The barley being first washed with
cold water from the adhering
impurities, pour upon it about
half a pint of water, and boil
the barley a little time. This
water, which will receive a tinge
from the barley, being thrown
away,

away add the distilled water, boiling, to the barley; boil it to two pints, and strain.

DECOCTUM HORDEI COMPOSITUM.

Lond.
Compound Decoction of Barley.

Take of

The decoction of barley, two pints;
Figs, sliced, two ounces;
Liquorice root, sliced and bruised, half an ounce;
Raisins, stoned, two ounces;
Distilled water, one pint.
Boil to two pints, and strain.

THESE liquors are to be drank freely as diluters in fevers and other disorders: hence it is of consequence that they should be prepared so as to be as elegant and agreeable as possible; for this reason they are inserted in the pharmacopœia, and the several circumstances which contribute to their elegance set down; if any one of them be omitted, the beverage will be less grateful. However trivial medicines of this class may appear to be, they are of greater importance in the cure of acute diseases than many more elaborate preparations.

Barley water, however, is much more frequently prepared by nurses than apothecaries, particularly in its simple state. The compound decoction contains a large proportion of saccharine and mucilaginous matter, and may be employed for the same purposes as the *decodum altheæ* of the Edinburgh pharmacopœia.

DECOCTUM GUAIACI COMPOSITUM, vulgo DECOCTUM LIGNO-RUM.

Edinb.
Compound Decoction of Guaiacum, commonly called Decoction of the Woods.

Take of

Guaiacum raspings, three ounces;
Raisins stoned, two ounces;
Sassafras root, shaved, Liquorice, sliced, each one ounce;
Water, ten pounds.
Boil the guaiacum and raisins with the water, over a gentle fire, to the consumption of one half; adding, towards the end, the sassafras and liquorice. Strain the liquor without expression.

THIS decoction is very well contrived; and if its use be duly continued, it will do great service in some cutaneous diseases, in what has been called foulness of the blood and juices, and in some disorders of the breast; particularly in phlegmatic habits. It may be taken by itself to the quantity of a quart or of a pint twice or thrice a day, or used as an assistant in a course of mercurial or antimonial alterations; the patient in either case keeping warm, in order to promote the operation of the medicine. The raspings exposes a larger surface to the action of the water than the shavings directed in the former edition of the pharmacopœia.

DECOCTUM SARSAPARILLÆ.

Lond. Edinb.
Decoction of Sarsaparilla.

Take of

The root of sarsaparilla, sliced, 3 M
lis

fix ounces ;

Distilled water, eight pints.

Macerate for two hours, with an heat of about 195°; then take out the root, and bruise it ; return the bruised root into the liquor, and again macerate it for two hours. Then the liquor being boiled to four pints, press it out, and strain.

THIS decoction is an article in very common use, particularly in venereal affections. And there can be little doubt, that by this process the medical powers of the sarsaparilla are fully extracted. But it has of late been much questioned, whether this article be in any degree intitled to the high character which was once given of it. Some, as we have already observed, are even disposed to deny its possessing any medical power whatever.

DECOCTUM SARSAPARILLÆ COMPOSITUM.

Lond.

Compound decoction of Sarsaparilla.

Take of

The root of sarsaparilla, sliced and bruised, six ounces ;

Bark of sassafras root,

Raspings of guaiacum,

Liquorice root, bruised, of each one ounce ;

Bark of mezereon root, three drachms ;

Distilled water, ten pints.

Macerate, with a gentle heat, for six hours ; then boil it down to five pints, adding, towards the end, the bark of mezereon root, and strain the liquor.

THIS compound decoction is an elegant mode of preparing an article once highly celebrated under

the title of the *Lisbon diet drink*. That formula for a long time after its first introduction into Britain, was kept a secret ; but an account of the method of its preparation was at length published in the *Physical and Literary Essays of Edinburgh*, by Dr Donald Monro. It is highly probable, that its good effects principally depend on the impregnation it receives from the mezereon ; and all the good effects of this compound may be produced from the following more simple one.

DECOCTUM MEZEREI.

Edin.

Decoction of Mezereon.

Take of

The bark of mezereon root, two drachms ;

Liquorice root, bruised, half an ounce ;

Water, three pounds.

Boil it with a gentle heat, down to two pounds, and strain it.

DECOCTUM SENEKÆ.

Edin.

Decoction of Seneka.

Take of

Seneka root, one ounce ;

Water, two pounds.

Boil to sixteen ounces, and strain.

THE virtues of this decoction will be easily understood from those of the root from which it is prepared. The dose, in hydropic cases, and rheumatic or arthritic complaints, is two ounces, three or four times a day, according to its effect.

DECOCTUM ULMI.

*Lond.**Decoction of Elm.*

Take of

The fresh inner bark of elm,
bruised, four ounces;
Distilled water, four pints.
Boil to two pints, and strain.

Decoction has been the chief, if not the only, form in which elm-bark has been employed for combating those cutaneous eruptions against which it has of late been so highly celebrated. Any experience which we have had of it, however, in actual practice, by no means confirms the very favourable account which some have given of its use.

MUCILAGO AMYLI.

*Lond. Edin.**Mucilage of Starch.*

Take of

Starch, three drachms;
Distilled water, one pint.
Rub the starch, by degrees adding the distilled water; then boil it a little time.

The Edinburgh pharmacopœia orders half an ounce of starch, to a pound of water.

THE mucilage of starch thus formed is very useful in those cases where a glutinous substance is required; it is often successfully employed, as a glyster, in diarrhoeas depending on acrimony in the intestines.

MUCILAGO ARABICI GUMMI.

*Lond.**Mucilage of Gum Arabic.*

Take of

Gum arabic, powdered, four ounces;
Boiling distilled water, eight ounces.

Rub the gum with the water until it be dissolved.

MUCILAGO GUMMI ARABICI.

*Edinb.**Mucilage of Gum Arabic.*

Take of

Gum arabic, beat into powder, and warm water, each equal weights.

Digest, and frequently stir them till the gum be dissolved, then press the solution through linen.

It is very necessary to pass the mucilage through linen in order to free it from pieces of wood and other impurities, which always adhere to the gum; the linen may be placed in a funnel.

Mucilage of gum arabic is very useful in many operations in pharmacy; it is also much used for properties peculiar to those substances of its own class, and of all the gums it seems to be the purest.

MUCILAGO TRAGACANTHÆ.

*Lond.**Mucilage of Tragacanth.*

Take of

Tragacanth, half an ounce;
Distilled water, ten ounces, by measure.

Macerate them, with a gentle heat,

' heat, till the tragacanth be dissolved.

MUCILAGO GUMMI TRAGACANTHÆ.

Edinb.

Mucilage of Gum Tragacanth.

Take of

Gum tragacanth, powdered, one ounce;

Hot water, eight ounces.

Macerate twenty-four hours; then mix them, by rubbing briskly, that the gum may be dissolved; and press the mucilage through linen cloth.

THIS gum is more difficultly soluble in water than gum arabic, and seems to be considerably more adhesive; it is therefore fitter for forming troches, and such like purposes. It has been thought to be more peculiarly what has been called a pectoral, than the other gums; but this does not seem to be certainly founded. This mucilage is perhaps preferable to the foregoing in those operations in pharmacy where much tenacity is required; as in the suspension of mercury, or other ponderous bodies.

MUCILAGO SEMINIS CYDONII MALL.

Lond.

Mucilage of Quince-seed.

Take of

Seeds of the quince, one drachm; Distilled water, eight ounces, by measure.

Boil with a slow fire for ten minutes: then pass it through linen.

THIS is a pleasant soft mucilage, of a somewhat sweetish taste, and a slight agreeable smell: in these

respects, and in its easy solubility in water, it differs from the mucilage of gum tragacanth, to which some have supposed it similar: it has another difference, to its disadvantage, being apt to grow mouldy in keeping.

INFUSUM GENTIANÆ COMPOSITUM.

Lond.

Compound Infusion of Gentian.

Take of

The root of gentian, one drachm; Dried orange peel, a drachm and an half;

Fresh outer-rind of lemons, half an ounce;

Boiling water, twelve ounces, by measure.

Macerate for an hour, and strain.

INFUSUM AMARUM, five INFUSUM GENTIANÆ COMPOSITUM.

Edinb.

Bitter Infusion, or compound infusion of Gentian.

Take of

Gentian root, half an ounce;

Dried peel of Seville oranges, one drachm;

Coriander seeds, half a drachm;

Proof-spirit, four ounces;

Water, one pound.

First pour on the spirit, and three hours thereafter add the water; then macerate without heat for a night, and strain.

THESE formulæ do not materially differ. That of the London college is the most expeditious mode of preparation: But that of the Edinburgh college possesses other advantages, which outweigh that circumstance.

In

In former editions of the Edinburgh Pharmacopœia, the water was directed to be boiling; this was at least unnecessary, and was liable to the objections observed against decoctions. The proof spirit is an useful addition, as it assists in extracting the resinous parts, and preserving the infusion from fermentation, and at the same time communicates an agreeable pungency to the liquor. This infusion is an extremely good bitter, and is of great service in all cases where bitters in general are necessary. It strengthens the stomach and increases appetite; besides acting as a tonic on the other parts of the body and on the vascular system.

INFUSUM CATECHU, vulgo INFUSUM JAPONICUM.

Edin.

Infusion of Catechu, commonly called Japonic Infusion.

Take of

Extract of Catechu, two drachms
and an half;

Cinnamon, half a drachm;

Boiling water, seven ounces;

Simple syrup, one ounce.

Macerate the extract and cinnamon in the hot water in a covered vessel for two hours, then strain it and add the syrup.

THIS infusion is somewhat like a decoction that had formerly a place in our pharmacopœias, under the name of *Decoctura japonicum*, in which, however, some opium entered. It is a very agreeable medicine, and will be found serviceable in fluxes proceeding from a laxity of the intestines. Its dose is a spoonful or two every other hour.

INFUSUM SENNÆ SIM- PLEX.

Lond.

Simple Infusion of Senna.

Take of

Senna, an ounce and a half;

Ginger, powdered, one drachm;

Boiling distilled water, one pint.

Macerate them for an hour, in a covered vessel; and strain the liquor when cold.

THIS, although a simple, is a very elegant infusion of senna, the ginger acting as an useful corrigent. But if the senna were employed to the quantity of a drachm and an half, or two drachms only, with the same menstruum, in place of the quantity here ordered, it would be a no less useful medicine, and might be employed for one dose, as it is best when fresh. Of the present infusion, an ounce or two is a sufficient dose.

INFUSUM SENNÆ TARTARISATUM.

Lond.

Tartarised infusion of Senna.

Take of

Senna, one ounce and a half;

Coriander-seeds, bruised, half
an ounce;

Crytals of tartar, two drachms;

Distilled water, one pint.

Dissolve the crytals of tartar by boiling in the water; then pour the boiling hot solution on the senna and seeds. Macerate for an hour in a covered vessel, and strain when cold.

Formerly an alkaline salt was used in the infusion of senna, instead of the acid one here directed.

The

The first was supposed to promote the operation of the medicine, by superadding a degree of purgative virtue of its own, and by enabling the water to extract somewhat more from the capital ingredient than it would be capable of doing by itself; while acids were alleged to have rather a contrary effect. Experience, however, has sufficiently shewn, that alkaline salts increase the offensiveness of the senna, while crystals of tartar considerably improve the colour of the infusion, and likewise render the taste to some persons less disagreeable. Soluble tartar should seem a good ingredient in these kinds of compositions, as it not only improves the taste, but promotes the purgative virtue of the medicine; this addition also renders the infusion less apt to gripe, or occasion flatulencies.

INFUSUM TAMARINDO.

RUM cum SENNA.

Edinb.

Infusion of Tamarinds with Senna.

Take of

Tamarinds, six drachms;

Crystals of tartar,

Senna, each one drachm;

Coriander-seeds, half a drachm;

Brown sugar, half an ounce;

Boiling water, eight ounces.

Macerate in a close earthen vessel, not glazed with lead; stir the liquor now and then, and after it has stood four hours strain it.

It may also be made with double, triple, &c. the quantity of senna.

BOTH this and the former infusions might be made with cold water. By this means the aro-

matic quality of the coriander seeds would probably be extracted in a more perfect state; but the crystals of tartar are so difficultly soluble in cold water, that for extemporaneous use it is in some measure necessary to prepare them in the manner here directed: it is not indeed probable, that when such soluble matters as acids and sugar are presented to water, the water shall be able to extract such a quantity of the finer volatile part of aromatics as to afford any considerable flavour to the liquor; where an aromatic is required, ~~we~~ would therefore propose, that some agreeable aromatic water should be mixed with the liquor immediately before swallowing it; ~~or~~ that a quantity of aromatic oil should be incorporated with the cold infusion by means of gum, or a part of the sugar which might be reserved for that purpose. It is a very necessary caution not to make this infusion in vessels glazed with lead, otherwise the acid might corrode the lead, and communicate its poisonous quality to the infusion.

Both these infusions are mild and useful purges; the latter in particular is excellently suited for delicate stomachs, at the same time that it is very much calculated for febrile and other acute diseases. It is observable, that sugar added to neutral salts, rather increases than diminishes their nauseousness; but when used along with an acid, such as tamarinds, or a salt wherein the acid predominates, as in crystals of tartar, it is found very much to improve their taste: the acid in this infusion, or rather the combination of acid and sweet, are found to counter the taste of the senna very effectually; the aromatic serves also

also the same purpose, but would perhaps be better applied in the way above proposed.

INFUSUM ROSÆ.

Lond.

Infusion of the Rose.

Take of

Dried red rose-buds, half an ounce;

Dilute vitriolic acid, three drachms;

Boiling distilled water, two pints and a half;

Double-refined sugar, one ounce and a half.

To the water, first poured on the petals in a glass vessel, add the dilute vitriolic acid, and macerate for half an hour. Strain the liquor when cold, and add the sugar.

INFUSUM ROSARUM, vulgo
TINCTURA ROSARUM.

Edinb.

*Infusion of Roses, commonly called
Tincture of Roses.*

Take of

Red roses, dried, one ounce;

Boiling water, five pounds;

Vitriolic acid, one drachm;

White sugar, two ounces.

Macerate the roses with the boiling water in a vessel not glazed with lead, four hours; then having poured on the acid, strain the liquor, and add the sugar,

SOME have directed the vitriolic acid to be dropped upon the roses before the water is put to them; but this method is certainly faulty; for such of the roses as this caustic liquor falls on undiluted, will be burnt up by it, and have their texture destroyed. Others have

made the infusion of the roses in the mixture of water and acid, as in the formula given by the London college: but the acid weakens the power of the water as a menstruum; and hence the formula of the Edinburgh college is preferable. The infusion should be made in a glass or stone-ware vessel rather than an earthen one glazed with lead, which the acid will be apt to corrode.

This infusion is of an elegant red colour, and makes a very grateful addition to juleps in hæmorrhagies, and in all cases which require mild coolers and subastringents; it is sometimes taken with boluses or electuaries of the bark, and likewise makes a good gargle; but although in our pharmacopœias it has its name from the roses, yet its virtues are to be ascribed chiefly, if not entirely, to the vitriolic acid.

INFUSUM RHEI.

Edinb.

Infusion of Rhubarb.

Take of

Rhubarb, half an ounce;

Boiling water, eight ounces;

Spirit of cinnamon, one ounce.

Macerate the rhubarb in a glass vessel with the boiling water for a night; then having added the spirit of cinnamon, strain the liquor.

This appears to be one of the best preparations of rhubarb, when designed as a purgative; water extracting its virtue more effectually than either vinous or spirituous menstrua: and the London college might have given it a place in their Pharmacopœia as well as the *vinum* or *tinctura rhubarbæ*.

A-

AQUA CALCIS.

 Lond. *Lime-water.*

Take of

Quicklime, half a pound ;

Boiling distilled water, twelve pints.

Mix, and set it aside in a covered vessel for an hour ; then pour off the liquor, which keep in a close stopp'd vessel.

 Edinb.

Take half a pound of fresh burnt quicklime ; put it into an earthen vessel, and gradually sprinkle on it four ounces of water, keeping the vessel shut while the lime grows hot and falls into powder. Then pour on it twelve pounds of water, and mix the lime thoroughly with the water by shaking. After the lime has subsided renew the shaking ; and let this be done about ten times, always keeping the vessel shut that the access of the air may be the more effectually prevented. Lastly, let the water be filtered through paper placed in a funnel close shut at its top ; and it must be kept in very close stopp'd vessels.

THE reason of adding the water by degrees to the lime is, that when poured on at once, it reduces the external part to a kind of muddy substance, or soft paste, which in some measure defends the internal part from being acted on by the water. The different proportions of water in the two above prescriptions occasion no sensible difference in the strength of the product ; the quicklime is far from yielding all its soluble parts to either proportion ; the remaind-

er giving a strong impregnation to many fresh quantities of water, though not so strong as to the first. The caution of keeping the lime water in close-stopp'd vessels ought to be strictly attended to, for in open ones the calcareous matter dissolved in the liquor soon begins to separate, and forms a white crust on the surface. This is not a salt, as some have imagined ; but an insipid earth, no longer miscible with watery liquors. The theory of its production will be easily understood from what we have said on the article *FIXED*

AIR. The separation first takes place at the surface, as being the part immediately applied to the common air : as long as the crust remains entire, the closeness of its texture so excludes the air, that the rest of the water still remains impregnated with lime ; but when this pellicle is broken by any means, it soon sinks to the bottom, and exposes a new surface for the separation of the lime. In this way a succession of crusts and precipitations are formed, till the whole of the once caustic and soluble quicklime is now found, at the bottom of the vessel, in the state of a mild insoluble calcareous earth, leaving the water perfectly insipid. The formation of these crusts, and their successive precipitations, are owing to the absorption of fixed air, or aerial acid, from the atmosphere : and the mild insoluble state of these precipitations is also owing to the same cause.

The distilled water recommended by the London college is certainly preferable to common spring water ; the purity of which can rarely be depended on.

Lime-water has been thought of great service in scrophulous complaints ;

plaints; but perhaps on no very good foundation. It has also been used both internally and externally for various affections of the skin. It seems to be very considerably astringent, and has been useful in some kinds of alvine fluxes, in diabetes, leucorrhœa, and in sundry other disorders proceeding from a laxity or debility of the solids.

Its more common use is in affections of the stomach accompanied with acidity and flatulence: for which last complaint, the mild or aerated earths are less proper, on account of the separation of air on their meeting with an acid in the stomach. Lime-water is also capable of dissolving mucus; and may therefore be used where redundancy of the intestinal mucus affords a nidus for worms, or gives rise to other complaints. It has also been found, that lime-water injected into the anus immediately kills ascarides. The lithontriptic powers of lime water seem at present to be much doubted. Lime-water is given in doses proportioned to the nature of the complaints; in some cases, as in diabetes, it may be given in divided portions to the extent of two quarts a-day. It is used externally for washing what are called *soul or ill-conditioned ulcers*; it is also injected into the vagina and other parts affected with preternatural discharges from laxity.

The use of lime-water in scurvy is very doubtful.

ACETUM SCILLÆ.

Lond.

Vinegar of Squills.

Take of

Squills, dried, one pound;

Vinegar, six pints;

Proof-spirit, half a pint.

3 N

Macerate the squills in the vinegar, with a gentle heat, in a glass vessel, for twenty-four hours; then press out the liquor, and set it by that the feces may subside: lastly, pour off the liquor, and add to it the spirit.

ACETUM SCILLITICUM.

Edinb.

Squill Vinegar.

Take of

Dried root of squills, two ounces;

Distilled vinegar, two pounds and a half;

Rectified spirit of wine, three ounces.

Macerate the squills with the vinegar eight days; then press out the vinegar, to which add the spirit; and when the feces have subsided, pour off the clear liquor.

VINEGAR of squills is a medicine of great antiquity: we find, in a treatise attributed to Galen, an account of its preparation, and of many particular virtues then ascribed to it. It is a very powerful stimulant; and hence it is frequently used, with great success, as a diuretic and expectorant. The dose of this medicine is from a drachm to half an ounce: where crudities abound in the first passages, it may be given at first in a larger dose, to evacuate them by vomiting. It is most conveniently exhibited along with cinnamon, or other agreeable aromatic waters, which prevent the nausea it would otherwise, even in small doses, be apt to occasion.

ACL.

ACETUM AROMATICUM.

Edinb
Aromatic Vinegar.

vinegar in its simple state, for impregnating with antiseptic vapours the chambers of the sick.

Take of

Tops of rosemary.

Leaves of sage, each four ounces;

℥ss;

Flowers of lavender, two ounces;

Cloves, two drachms;

Vinegar, eight pounds.

Macerate for four days, express the liquor, and strain it.

This may be considered as an elegant improvement of what had formerly a place in the foreign pharmacopœias, under the title of *Acetum presphylicum*, which contained not only the present articles, but also a confused farrago of others, as wormwood, rue, garlic, cinnamon, &c.

It is said, that during the plague at Marseilles, four persons, by the use of the acetum prophylacticum as a preservative, attended unhurt, multitudes of those who were infected; that under colour of those services, they robbed both the sick and the dead; and that one of them, being afterwards apprehended, saved himself from the gallows by discovering the remedy. The preparation was hence called *Vinaigre des quatre voleurs*; “The vinegar of the four thieves.” It is not to be doubted, that vinegar, impregnated with antiseptic vegetables, will greatly contribute to prevent the effects of contagious air. And in the present acetum aromaticum, we have a stronger and better impregnation, than from the numerous articles which were employed. We cannot, however, imagine that it will be able to counteract the contagion of the plague: but it may on different occasions be more powerful than

ACETUM ROSACEUM.

Succ.

Vinegar of Roses.

Take of

The flowers of red roses, dried, any quantity; add to them twelve times their weight of vinegar.

Macerate for four days, and strain through paper.

This has been chiefly used for embrocating the head and temples in some kinds of headach, &c. in which it has now and then been of service. It has also been used for certain cases of ophthalmia; but before it can be applied to the eyes, it will in general require to be diluted with water.

ACETUM COLCHICI.

Ros.

Vinegar of Colchicum.

Take of

The recent root of colchicum, cut into slices, one ounce;

Vinegar, one pound

Macerate with a gentle heat for two days; then strain after slight expression.

ALTHOUGH in our pharmacopœias a place be given to the oxymel and syrup of colchicum, both of which are formed from the vinegar, yet the vinegar itself is not directed to be kept in its separate state: Under this form however it may often be employed with advantage.

AQUA

AQUA PICEA.

*Succ.**Tar water.*

Take of

Tar, two pounds ;

Water, one gallon.

Sir them strongly together with a wooden rod ; and after standing to settle for twelve hours, pour off the water for use.

TAR-WATER was recommended to the world as a certain and safe medicine in almost all diseases ; a slow yet effectual alterative in cachexies, scurvy, chlorotic, hysterical, hypochondriacal, and other chronic complaints ; and a sudden remedy in acute distempers which demand immediate relief, as pleuritis, peripneumonies, the small-pox, and all kinds of fevers in general. This medicine, though certainly far inferior to the character that has been given of it, is doubtless in many cases of considerable utility : it sensibly raises the pulse ; and occasions some considerable evacuation, generally by perspiration or urine, though sometimes by stool or vomit.

We shall here insert, from the first public recommender of this liquor (Bishop Berkeley), some observations on the manner of using it. " Tar water, when right, is not paler than French, nor deeper coloured than Spanish white wine, and full as clear ; if there be not a spirit very sensibly perceived in drinking, you may conclude the tar-water is not good. It may be drank either cold or warm. In colics, I take

" it to be best warm. As to the quantity, in common chronic indispositions, a pint a-day may suffice, taken on an empty stomach, at two or four times, to wit, night and morning, and about two hours after dinner and breakfast : more may be taken by stronger stomachs. But those who labour under great and inveterate maladies, must drink a greater quantity, at least a quart every twenty-four hours. All of this class must have much patience and perseverance in the use of this, as well as of all other medicines, which though sure, must yet in the nature of things be slow in the cure of inveterate chronic disorders. In acute cases, fevers of all kinds, it must be drank in bed warm, and in great quantity (the fever still enabl'g the patient to drink), perhaps a pint every hour, which I have known to work surprising cures. But it works so quick, and gives such spirits, that the patients often think themselves cured before the fever has quite left them."

Notwithstanding these encomiums, tar water seems to have lost its reputation. It is not probable that water can take up much of the more active principles of the tar ; and it would perhaps be more convenient to separate its acid by distillation, and mix it with water occasionally : for it is pretty certain, that the water can only take up the acid of the tar, perhaps charged with a very small quantity of oily matter in the state of an acid sope.

C H A P. XXI.

VINA MEDICATA.

MEDICATED WINES.

THE original intention of medicated wines was, that medicines which were to be continued for a length of time, might be taken in the most familiar and agreeable form; by this means a course of remedies was complied with, notwithstanding the repugnance and aversion, which the sick often manifest to those directly furnished from the shops; and hence the inferior sorts of people had their medicated ales. Nevertheless, as vinous liquors excellently extract the virtues of several simples, and are not ill fitted for keeping, they have been employed as official menstrua also; and substances of the greatest efficacy are trusted to in this form. As compounds of water and inflammable spirits, they take up such parts of vegetables and animals as are soluble in those liquors; though most of them are bound at the same time with a mucilaginous or viscous substance, which renders them less effectual menstrua than purer mixtures of water and spirit. They contain likewise a subtile acid, which some-

what further obstructs their action on certain vegetable and animal matters; but enables them, in proportion to its quantity, to dissolve some bodies of the metallic kind, and thus impregnate themselves with the corroborating virtues of steel, the alterative and emetic powers of antimony, and the noxious qualities of lead.

To all the medicated wines, after they have been strained, you may add about one twentieth their quantity of proof-spirit, to preserve them from fermentation. They may be conveniently kept in the same kind of glass bottles that wines are generally kept in for common uses, which should likewise be corked with the same care.

VINUM ALOES.

Lond.

Wine of Aloes.

Take of

Socotorine aloes, eight ounces;
 Canella alba, two ounces;
 Spanish white-wine, six pints;
 Proof-spirit, two pints.

Pow.

Powder the aloes and canella separately; when mixed pour on them the wine and spirit: digest for fourteen days, now and then shaking them; and strain. It will not be amiss to mix white sand, cleansed from impurities, with the powder, in order to prevent the moistened aloes from getting into lumps.

VINUM ALOETICUM, vulgo TINCTURA SACRA.

Edin.

*Aloetic wine, commonly called
Sacred Tincture.*

Take of

Socotorine aloes, one ounce;
Lesser cardamom seeds,
Ginger, each one drachm;
Spanish white wine, two pounds.
Digest for seven days, stirring now and then, and afterwards strain.

THIS medicine has long been in great esteem not only as a cathartic, but likewise as a stimulus; the wine dissolving all that part of the aloes in which these qualities reside, a portion only of the less active resinous matter being left. The aromatic ingredients are added to warm the medicine, and somewhat correct the ill flavour of the aloes.

The *tinctura sacra* appears from long experience to be a medicine of excellent service. The dose, as a purgative, is from one to two ounces. It may be introduced into the habit, so as to be productive of excellent effects, as an alterant, by giving it in small doses, at proper intervals: thus managed, it does not for a considerable time operate remarkably by stool: but at length proves purgative, and occasions a lax habit of much longer continuance

than that produced by the other common cathartics.

VINUM AMARUM, five GEN- TIANÆ COMPOSITUM.

Edin.

Bitter wine, or compound gentian wine.

Take of

Gentian root, half an ounce;
Peruvian bark, one ounce;
Seville orange-peel, dried, two drachms;
Canella alba, one drachm;
Proof spirit, four ounces;
Spanish white wine, two pounds and a half.

First pour on the spirit, and after twenty four hours add the wine; then macerate for three days, and strain.

THIS wine is intended to supply the place of the *Tinctura ad Stomachicos*, as it was formerly called. Wine is a menstruum fully capable of extracting the active powers of the different ingredients; and it supplies us with a very useful and elegant stomachic medicine, answering the purposes intended much better than the celebrated elixir of Van Helmont, and other unchemical and uncertain preparations, which had formerly a place in our pharmacopœias.

VINUM ANTIMONII.

Lond.

Wine of Antimony.

Take of

Vitrified antimony, powdered, one ounce;
Spanish white wine, a pint and an half.

Digest for twelve days, frequently shaking

shaking the vessel, and filter the wine through paper.

HOWEVER carefully the settling and decantation are performed, the filtration of the wine through paper appears to be necessary, lest some of the finer parts of the glass should chance to remain suspended in the wine. The matter left undissolved by the menstruum is not, as in most other wines and tinctures, of little consequence; the antimonial glass, after the action of the wine, continues as virulent as ever, and is capable of impregnating fresh parcels of the liquor as strongly as the first, and this, in appearance, inexhaustibly. After thirty repeated infusions, it has been found scarce sensibly diminished in weight.

The antimonial wine possesses the whole virtues of that mineral, and may so be dosed and managed as to perform all that can be effected by any antimonial preparation; with this advantage, that as the active part of the antimony is here already dissolved and rendered miscible with the animal fluids, its operation is more certain, From ten to fifty or sixty drops, generally act as an alterative and diaphoretic: larger doses act as a diuretic and cathartic; while three or four drachms prove for the most part violently emetic. It has been chiefly used with this last intention, in some maniacal and apoplectic cases; and hence it gained the name of emetic wine. The quantity of the reguline part must, however, vary according to the proportions of the acid matter in different wines, and the operation of the medicine must be thereby less certain in degree; the vitrum is preferable to the crocus for making this prepara-

tion. See the different preparations of ANTIMONY, chap. 10.

VINUM ANTIMONII TAR- TARISATI.

Lond.

Wine of Tartarised Antimony.

Take of

Tartarised antimony, two scruples;

Boiling distilled water, two ounces;

Spanish white wine, eight ounces.

Dissolve the tartarised antimony in the boiling distilled water, and add the wine.

VINUM ANTIMONII TAR- TARISATI, vulgo VINUM ANTIMONIALE.

Edin.

Wine of Tartarised Antimony, commonly called Antimonial wine.

Take of

Tartarised antimony, twenty four grains;

Spanish white wine, one pound. Mix them so as that the antimony may be dissolved.

WATERY solutions of emetic tartar, on standing, precipitate a part which is less completely in a saline state; by this means, and especially if the solution be not shaken before using it, the dose of that medicine is somewhat ambiguous: in the above formula, the acid matter of the wine increases the saline state of the antimony and therefore its solubility, whereby the operation of the medicine is more certain, and in many cases more powerful. From the certainty of its effects, this preparation might be very convenient in large hospitals or armies, where great numbers of the sick, and

and inaccurate nursing, frequently occasion an uncertain or dangerous practice.

In the formula employed by the Edinburgh college, each ounce of the wine contains two grains of the tartarised antimony; but in that of the London college, each ounce of the menstruum contains four grains; hence, while an ounce of the one may be employed for exciting full vomiting, the same quantity of the other would be too strong a dose. It is much to be regretted that in articles of this active nature, the proportions employed by the two colleges should differ so considerably: and it would perhaps have been better, had the London college adopted the proportions employed by that of Edinburgh, as they have followed them in adopting this formula.

VINUM FERRI.

Lond.

Wine of Iron.

Take of

Iron filings, four ounces;

Spanish white wine, four pints.

Digest for a month, often shaking the vessel, and then strain.

THIS formula of the London pharmacopœia is now not only simplified, but improved, when compared with their former *vinum dulcificatum*: for the cinnamon and other articles which were then conjoined with the iron, were certainly rather prejudicial than otherwise; but, at the same time, Rhenish wine, formerly employed, is a better menstruum than the Spanish wine now directed. The medicine may still, however, be justly considered as a good chalybeate.

Stiel wine, as it was formerly

called, is a very useful preparation of this metal, and frequently exhibited in chlorotic and other indispositions where chalybeates are proper. The dose is from a drachm to half an ounce; which may be repeated twice or thrice a day.

Some direct solutions of iron, made in wine or other vegetable acids, to be evaporated to the consistence of an extract, under the title of *EXTRACTUM MARTIS*. These preparations have no advantage, in point of virtue, above the common chalybeates: though, in some forms, that of pills in particular, they may be rather more commodiously exhibited than most of the officinal chalybeates of equal efficacy. They may be made into pills by themselves, and are tenacious enough to reduce other substances into that form.

VINUM IPECACUANHÆ.

Lond.

Wine of Ipecacuanha.

Take of

The root of ipecacuanha, bruised, two ounces;

Spanish white wine, two pints.

Digest for ten days, and strain.

VINUM, vulgo TINCTURA IPECACUANHÆ.

Edinb.

Wine, commonly called Tincture of Ipecacuanha.

Take of

Ipecacuanha, in powder, one ounce;

Spanish white wine, fifteen ounces.

After three days maceration, let the tincture be filtrated for use.

Both

Both these wines are very mild and safe emetics, and equally serviceable in dysenteries, with the ipecacuanha in substance; this root yielding nearly all its virtues to the Spanish white wine, here ordered, as it does a good share of them even to aqueous liquors. The common dose is an ounce, more or less, according to the age and strength of the patient. The college of Edinburgh formerly added a scruple of cochineal, which imparts a fine red colour to the liquor: this article is now omitted, on a complaint, that the red colour of the matters evacuated, sometimes alarmed the patient, as if it proceeded from a discharge of blood.

VINUM RHABARBARI.

Lond
Wine of Rhubarb.

Take of

Sliced rhubarb, two ounces and an half;
Lesser cardamom-seeds, bruised and husked, half an ounce;
Saffron, two drachms;
Spanish white wine, two pints;
Proof spirit, half a pint.
Digest for ten days, and strain.

VINUM RHEI.

Edin
Rhubarb Wine.

Take of

Rhubarb, two ounces;
Canela alba, one drachm;
Proof spirit, two ounces;
Spanish white wine, fifteen ounces.
Macerate for seven days, and strain.

By assisting the solvent power of the menstruum, the proof spirit in the above formulæ is a very useful

addition. This is a warm, cordial, laxative medicine. It is used chiefly in weakness of the stomach and bowels, and some kinds of looseness, for evacuating the offending matter, and strengthening the tone of the viscera. It may be given in doses of from half a spoonful to three or four spoonfuls or more, according to the circumstances of the disorder, and the strength of the patient.

VINUM NICOTIANÆ.

Edinb.
Tobacco Wine.

Take of

The dried leaves of the best Virginian tobacco, one ounce;
Spanish white wine, one pound.
Macerate for four days, and then strain the liquor.

We have already, under the article NICOTIANA in the Materia Medica, offered some observations on its late introduction into practice by Dr Fowler, as a very useful remedy in the cure of dropsies and dysuries. From experiments, wine extracts the active principles of tobacco better than any other menstruum.

VINUM SCILLITICUM.

Succ.
Squill Wine.

Take of

Dried squill, sliced, one ounce;
Ginger, one drachm;
French white wine, two pounds.
Macerate for three days, and then strain.

By the wine employed as a menstruum, the active properties of the squills may be readily extracted: and in some cases at least the pre-

least

sent formula may justly be considered as intitled to a preference over either the acetum or oxymel scillæ, which have a place in our pharmacopœias. The ginger here added to the squills operates as an

useful corrigent; and on this account the present formula is preferable to the *vinum scilliticum* of some other pharmacopœias; where the squills alone are used.

C H A P. XXII.

TINCTURÆ.

TINCTURES.

RECTIFIED spirit of wine is the direct menstruum of the resins and essential oils of vegetables, and totally extracts these active principles from sundry vegetable matters, which yield them to water either not at all, or only in part. It dissolves likewise the sweet faccharine matter of vegetables; and generally those parts of animal bodies, in which their peculiar smell and taste reside.

The virtues of many vegetables are extracted almost equally by water and rectified spirit; but in the watery and spirituous tinctures of them there is this difference, that the active parts in the watery extractions are blended with a large proportion of inert gummy matter, on which their solubility in this menstruum in great measure depends, while rectified spirit extracts them almost pure from gum. Hence, when the spirituous tinctures are mixed with watery liquors, a part of what the spirit had taken up from the subject generally separates and subsides, on account of its having been freed from that matter which, being blended with it in the original

vegetable, made it soluble in water. This, however, is not universal; for the active parts of some vegetables when extracted by rectified spirits, are not precipitated by water, being almost equally soluble in both menstrua.

Rectified spirit may be tinged by vegetables of all colours, except blue: the leaves of plants, in general, which give out but little of their natural colour to watery liquors, communicate to spirit the whole of their green tincture, which for the most part proves elegant, though not very durable.

Fixed alkaline salts deepen the colour of spirituous tinctures; and hence they have been supposed to promote the dissolving power of the menstruum, though this does not appear from experience: in the trials that have been made to determine this affair, no more was found to be taken up in the deep-coloured tinctures than in the paler ones, and often not so much: if the alkali be added after the extraction of the tincture, it will heighten the colour as much as when mixed with the ingredients

ats at first. The addition of these salts in making tinctures, is not only useless, but prejudicial, as they generally injure the flavour of aromatics, and superadd a quality, sometimes contrary to the intention of the medicine. Volatile alkaline salts, in many cases, promote the action of the spirits. Acids generally weaken it; unless when the acid has been previously combined with the vinous spirit into a compound of new qualities, called *dulcified spirit*.

TINCTURA ALOES.

Lond. Edin.

Tincture of Aloes.

Take of

Socotorine aloes, powdered, half an ounce;

Extract of liquorice, an ounce and an half;

Distilled water,

Proof spirit, of each eight ounces.

Digest in a sand-bath, now and then shaking the vessel, until the extract be dissolved, and then strain.

In this simple tincture, all the active parts of the aloes, whether of a gummy or resinous nature, are suspended in the menstruum. The extract of liquorice serves both to promote the suspension and to cover the taste of the aloes; and in these cases where we wish for the operation of the aloes alone, this is perhaps one of the best formulæ under which it can be exhibited in a fluid state.

Though the two formulæ of our pharmacopœias are apparently the same, the proportions of the ingredients are somewhat different; owing to the London College

directing the water and spirit to be taken by measure, and that of Edinburgh by weight. Eight London ounce measures of water is, seven ounces, four drachms, and fifty five grains; and the same measure of proof spirit, seven ounces and thirty nine grains, Troy weight.

TINCTURA ALOES COMPOSITA.

Lond.

Compound Tincture of Aloes.

Take of

Socotorine aloes,

Saffron, of each three ounces;

Tincture of myrrh, two pints.

Digest for eight days; and strain.

TINCTURA ALOES cum MYRRHA, vulgo ELIXIR PROPRIETATIS.

Edinb.

Tincture of aloes with myrrh, commonly called Elixir Proprietas.

Take of

Myrrh in powder, two ounces;

Socotorine aloes, an ounce and a half;

English saffron, one ounce;

Rectified spirit of wine,

Proof-spirit, of each one pound.

Digest the myrrh with the spirits for the space of four days; then add the aloes in powder, and the saffron; continue the digestion for two days longer, suffer the feces to subside, and pour off the clear elixir.

THESE two formulæ, though the mode of preparation be somewhat varied, do not materially differ from each other; and both may be considered as being the *elixir proprietas* of Paracelsus, improved with regard to the manner of

of preparation. The myrrh, saffron, and aloes, have been usually directed to be digested in the spirit together: by this method, the menstruum soon loads itself with the latter, so as scarcely to take up any of the myrrh; while a tincture, extracted first from the myrrh, readily dissolves a large quantity of the others. The alkaline salt, commonly ordered in these preparations with a view to promote the dissolution of the myrrh, is useless; and is accordingly now omitted. Instead of employing the rectified spirit alone, the Edinburgh college have used an equal portion of proof spirit, which is not only a more complete menstruum, but also renders the medicine less heating.

This medicine is highly recommended, and not undeservedly, as a warm stimulant and aperient. It strengthens the stomach, evacuates the intestinal canal, and promotes the natural secretions in general. Its continued use has frequently done much service in cachectic and icteric cases, uterine obstructions, and other similar disorders; particularly in cold, pale, phlegmatic habits. Where the patient is of a hot, bilious constitution, and florid complexion, this warm stimulating medicine is less proper, and sometimes more prejudicial. The dose may be from twenty drops to a tea-spoonful or more, twice or thrice a-day, according to the purposes it is intended to answer.

TINCTURA ALOES VI- TRIOLATA, vulgo E- LIXIR PROPRIETATIS VITRIOLICUM.

Edinb.

Vitriolated Tincture of Aloes,
commonly called *Vitriolic E-
lixir Proprietary.*

Take of

Myrrh,

Socotorine aloes, of each an
ounce and an half;

English saffron, one ounce;

Spirit of vitriolic ether, one
pound.

Digest the myrrh with the spi-
rit for four days in a close ves-
sel; then add the saffron and
aloes.

Digest again four days; and
when the feces have subsided,
pour off the tincture.

THE Edinburgh College have reformed this preparation considerably; and especially by digesting the myrrh to be digested first, for the same reasons as were observed on the preceding article. Here the spirit of vitriolic ether is very judiciously substituted for the spirit of sulphur, ordered in other books of pharmacy to be added to the foregoing preparations; for that strong acid precipitates from the liquor great part of what it had before taken up from the other ingredients; whereas, when the acid is previously combined with the vinous spirit, and thereby dulcified, as it is called, it does not impede its dissolving power. This tincture possesses the general properties of the preceding, and, is, in virtue of the menstruum, preferred to it in hot constitutions, and weakness of the stomach.

TINCTURA

TINCTURA AROMATICA,
five CINNAMOMI COM-
POSITA.

Edinb.

*Aromatic Tincture, or Compound
Tincture of Cinnamon.*

Take of

Cinnamon, six drachms;

Lesser cardamom-seeds, one
ounce;

Garden angelica-root, three
drachms;

Long pepper, two drachms;

Proof-spirit, two pounds and
an half.

Macerate for seven days, and fil-
ter the tincture.

THIS preparation is improved
from the preceding editions by
omission of some articles, either
superfluous or foreign to the
intention; galingal, gentian, ze-
doary, bay-berries, and calamus
aromaticus. As now reformed,
it is a sufficiently elegant warm
aromatic.

THIS very warm aromatic is
too hot to be given without
dilution. A tea-spoonful or
two may be taken in wine, or
any other convenient vehicle,
in languors, weakness of the
stomach, flatulencies, and other
similar complaints; and in these
cases it is often employed with
advantage.

TINCTURA ASAFÆTIDÆ.

Lond.

Tincture of Asafetida.

Take of

Asafetida, four ounces;

Rectified spirit of wine, two
pints.

Digest with a gentle heat for six
days; and strain.

TINCTURA ASAFÆTIDÆ,
vulgo TINCTURA FÆ-
TIDA.

Edinb.

*Tincture of Asafetida, commonly
called Fætid Tincture.*

Take of

Asafetida, four ounces;

Rectified spirit of wine, two
pounds and an half.

Digest for six days; and strain.

THIS tincture possesses the
virtues of the asafetida itself;
and may be given in doses of
from ten drops to fifty or sixty.
It was first proposed to be made
with proof-spirit; this dissolves
more of the asafetida than a
rectified one: but the tincture
proves turbid; and therefore rec-
tified spirit, which extracts a
transparent one, is very justly
preferred: and with this men-
struum we can at least exhibit
the asafetida in a liquid form to
a greater extent.

TINCTURA AURANTII
CORTICIS.

Lond.

Tincture of Orange-Peel.

Take of

Fresh orange-peel, three oun-
ces;

Proof-spirit, two pounds.

Digest for three days; and strain.

THIS tincture is an agreeable
bitter, flavoured at the same time
with the essential oil of the o-
range-peel.

TINCTURA

TINCTURA BALSAMI PERUVIANI.

London.
Tincture of Balsam of Peru.

Take of

Balsam of Peru, four ounces;

Rectified spirit of wine, one pint.

Digest until the balsam be dissolved.

THE whole of the Peruvian balsam is dissolved by spirit of wine; this therefore may be considered as a good method of freeing it from its impurities; while at the same time it is thus reduced to a state under which it may be readily exhibited: but at present it is very little employed, unless in composition, either under this or any other form.

TINCTURA BALSAMI TOLUTANI.

London.
Tincture of Balsam of Tolu.

Take of

Balsam of Tolu, one ounce and an half;

Rectified spirit of wine, one pint.

Digest until the balsam be dissolved; and strain.

TINCTURA TOLUTANA.

Edinburgh.
Tincture of Tolu.

Take of

Balsam of Tolu, an ounce and an half;

Rectified spirit of wine, one pound.

Digest until the balsam be dis-

solved; and then strain the tincture.

THIS solution of Balsam of Tolu possesses all the virtues of the balsam itself. It may be taken internally, with the several intentions for which that balsam is proper, to the quantity of a tea-spoonful or two, in any convenient vehicle. Mixed with the plain syrup of sugar, it forms an elegant balsamic syrup.

TINCTURA BENZOES COMPOSITA.

London.

Compound tincture of benzoin.

Take of

Benzoin, three ounces;

Storax, strained, two ounces;

Balsam of Tolu, one ounce;

Socotorine aloes, half an ounce;

Rectified spirit of wine, two pints.

Digest with a gentle heat for three days, and strain.

TINCTURA BENZOINI

COMPOSITA, vulgo
BALSAMUM TRAUMATICUM.

Edinburgh.

Compound tincture of benzoin, commonly called Traumatic Balsam.

Take of

Benzoin, three ounces;

Balsam of Peru, two ounces;

Hepatic aloes, half an ounce;

Rectified spirit of wine, two pounds.

Digest them in a sand heat, for the space of ten days, and then strain the balsam,

ALTHOUGH

ALTHOUGH the London college have changed the name of this composition, yet they have made very little alteration on the formula which, in their last edition, had the name of *Traumatic balsam*; both of them are elegant contractions of some very complicated compositions, which were celebrated under different names, such as Baume de Com-mandeur, Wade's Balsam, Friar's balsam, Jesuit's drops &c. These, in general, consisted of a confused sarago of discordant substances. They, however, derived considerable activity from the benzoin and aloes; and every thing to be expected from them may readily be obtained from the present formulæ.

The compound tincture of benzoin or traumatic balsam, stands highly recommended, externally, for cleansing and healing wounds and ulcers, for discussing cold tumours, allaying gouty, rheumatic, and other old pains and aches; and likewise internally, for warming and strengthening the stomach and intestines, expelling flatulencies, and relieving colic complaints. Outwardly, it is applied cold on the part with a feather; inwardly a few drops are taken at a time, in wine or any other convenient vehicle.

There is however reason to think that its virtues have been considerably over-rated; and at present it is much less employed than formerly, recourse being chiefly had to it, in cases of recent wounds, with the view of stopping hæmorrhagies, and of promoting healing by the first intention, as it is called.

TINCTURA CANTHARIDIS.

Lond.

Tincture of the Spanish Fly.

Take of

Bruised cantharides, two drachms;
Cochineal, powdered, half a
drachm;

Proof-spirit, one pint and an
half.

Digest for eight days, and strain.

Edin.

Take of

Cantharides, one drachm;

Proof-spirit, one pound.

Digest for four days, and strain
through paper.

THESE tinctures possess the whole virtues of the fly, and are the only preparations of it designed for internal use: tinctures being by far the most commodious and safe form for the exhibition of this active drug. The two tinctures are scarcely different in virtue from each other. The cochineal is used only as a colouring ingredient: the gum guaiacum, camphor, and essential oil of juniper berries, which were formerly added, however well adapted to the intentions of cure, could be of little consequence in a medicine limited to so small a dose.

If any additional substances should be thought requisite for promoting the effect of the cantharides, whether as a diuretic, as a detergent of ulceration in the urinary passages, or as a specific restraining of seminal gleets and the fluor albus, they are more advantageously joined ex-temporaneously to the tincture, or interposed by themselves at proper intervals. The usual dose

of

of these tinctures, is from ten to twenty drops; which may be taken in a glass of water, or any other more agreeable liquor, twice a day; and increased by two or three drops at a time, according to the effect.

The tincture of cantharides has of late been highly celebrated as a successful remedy in diabetic cases; and in some instances of this kind, its use has been pushed to a very considerable extent, without giving rise to any dangerous affections: But we have not found it productive of a change for the better in any of those cases of diabetes in which we have tried it.

TINCTURA CARDAMOMI.

Lond.

Tincture of Cardamom.

Take of

Lesser cardamom seeds, husked and bruised, three ounces;

Proof spirit, two pints.

Digest for eight days, and strain.

Edin.

Take of

Lesser cardamom seeds, four ounces;

Proof spirit, two pounds and an half.

Macerate for eight days, and strain through paper.

TINCTURE of cardamoms has been in use for a considerable time. It is a pleasant, warm cordial; and may be taken, along with any proper vehicle, in doses of from a drachm to a spoonful or two.

TINCTURA CARDAMOMI COMPOSITA.

Lond.

Compound Tincture of Cardamom.

Take of

Lesser cardamom-seeds, husked, Caraway-seeds,

Cochineal, each, powdered, two drachms;

Cinnamon, bruised, half an ounce;

Raisins, stoned, four ounces;

Proof-spirit, two pints.

Digest for fourteen days, and strain.

THIS tincture contains so small a proportion of cardamoms as to be hardly intitled to derive its name from that article; and from the large proportion of raisins which it contains, the influence of the aromatics must be almost entirely prevented.

Take of

TINCTURA CASCARILLE.

Lond.

Tincture of Cascarilla.

Take of

The bark of cascarilla, powdered, four ounces;

Proof-spirit, two pints.

Digest with a gentle heat for eight days, and strain.

PROOF-SPIRIT readily extracts the active powers of the cascarilla; and the tincture may be employed to answer most of those purposes for which the bark itself is recommended: But in the cure of intermittents, it in general requires to be exhibited in substance.

TINC-

TINCTURA CASTOREI.
 *Lond.**Tincture of Castor.*om.
sked,
two
an

Take of
Russia castor, powdered, two
ounces;
Proof spirit, two pints.
Digest for ten days, and strain.

*Edinb.*TINCTURA CASTOREI
COMPOSITA.*Edin.**Compound Tincture of Castor.*

Take of
Russia castor, one ounce;
Asafetida, half an ounce;
Spirit of ammonia, one pound.
Digest for six days in a close stop-
ped phial, and strain.

;
rain.

Take of
Russia castor, an ounce and a
half;
Rectified spirit of wine, one
pound.
Digest them for six days, and
afterwards strain off the liquor.

An alkaline salt was formerly
added in this last prescription,
which is here judiciously rejected,
as being at least an useless, if not
prejudicial, ingredient. It has
been disputed, whether a weak or
rectified spirit, and whether cold
or warm digestion, are preferable
for making this tincture.

From several experiments made
to determine this question, it ap-
pears that castor macerated with-
out heat, gives out its finer and
most grateful parts to either spirit,
but most perfectly to the
rectified: that heat enables both
menstrua to extract greatest part
of its grosser and more nauseous
matter: and that proof-spirit ex-
tracts this last more readily than
rectified.

The tincture of castor is recom-
mended in most kinds of nervous
complaints and hysterical disorders:
In the latter it sometimes does
service, though many have com-
plained of its proving infestual.
The dose is from twenty drops to
forty, fifty, or more.

THIS composition is a medicine
of real efficacy, particularly in hy-
sterical disorders, and the several
symptoms which accompany them.
The spirit here used is an excellent
menstruum, both for the castor
and the asafetida, and greatly adds
to their virtues.

TINCTURA CATECHU.

 *Lond.**Tincture of Catechu.*

Take of

Catechu, three ounces;
Cinnamon, bruised, two ounces;
Proof-spirit, two pints.
Digest for three days, and strain.

TINCTURA CATECHU, vul-
go TINCTURA JAPONICA.*Edin.**Tincture of Catechu, commonly cal-
led Japonic Tincture.*

Take of

Insipidated juice of catechu,
three ounces;
Proof spirit, two pounds and a
half.

Digest for eight days, and strain.

A tincture of this kind, with
the addition of Peruvian bark,
ambergis, and musk, to the ingre-
dients above directed, was formerly
kept in the shops. The tincture
here received, is preferable for
general

P

general

general use : where any other ingredients are required, tinctures of them may be occasionally mixed with this in extemporaneous prescription. The cinnamon is a very useful addition to the catechu, not only as it warms the stomach, &c. but likewise as it improves the roughness and astringency of the other.

The tincture is of service in all kinds of defluxions, catarrhs, loosenesses, uterine fluors, and other disorders, where mild astringent medicines are indicated. Two or three tea-spoonfuls may be taken every now and then in red wine, or any other proper vehicle.

TINCTURA CINNAMOMI.

Lond.

Tincture of Cinnamon.

Take of

Cinnamon, bruised, one ounce
and an half ;

Proof-spirit, one pint.

Digest for ten days, and strain.

Edin.

Take of

Cinnamon, three ounces ;

Proof-spirit, two pounds and a
half.

Macerate for eight days, and
strain.

THE tincture of cinnamon possesses the restringent virtues of the cinnamon, as well as its aromatic cordial ones ; and in this respect it differs from the distilled waters of that spice,

TINCTURA CINNAMOMI COMPOSITA.

Lond.

Compound Tincture of Cinnamon.

Take of

Cinnamon, bruised, six drachms ;
Lesser cardamom-seeds, hulled,
three drachms ;

Long pepper,

Ginger, of each, in powder, two
drachms ;

Proof-spirit, two pints.

Digest for eight days, and strain.

FROM the different articles, which this tincture contains, it must necessarily be of a more hot and fiery nature than the former, though much less strongly impregnated with the cinnamon.

TINCTURA COLOMBÆ.

Lond.

Tincture of Colomba.

Take of

Colomba root, powdered, two
ounces and an half ;

Proof spirit, two pints.

Digest for eight days, and strain.

Edinb.

Take of

Colomba root, powdered, two
ounces ;

Proof-spirit, two pounds.

Digest for eight days and strain.

THE colomba readily yields its active qualities to the menstruum here employed ; and accordingly, under this form, it may be advantageously employed against bilious vomitings, and those different stomach ailments, in which the colomba has been found useful ; but where there does not occur some objection to its use in substance, that

that form is in general preferable to the tincture.

**TINCTURA CINCHONÆ, five
CORTICIS PERUVIANI.**

Lond.

Tincture of Peruvian bark.

Take of

Peruvian bark, powdered, six
ounces;

Proof-spirit, two pints.

Digest with a gentle heat for eight
days, and strain.

**TINCTURA CORTICIS PE-
RUVIANI.**

Edin.

Tincture of Peruvian bark.

Take of

Peruvian bark, four ounces;

Proof-spirit, two pounds and a
half.

Digest for ten days, and strain.

A medicine of this kind has been for a long time pretty much in esteem, and usually kept in the shops, though but lately received into the pharmacopœias. Some have employed highly-rectified spirit of wine as a menstruum; which they have taken care fully to saturate, by digestion on a large quantity of the bark. Others have thought of assisting the action of the spirit by the addition of a little fixed alkaline salt, which does not, however, appear to be of any advantage; and others have given the preference to the vitriolic acid, which was supposed, by giving a greater confidence to the spirit, to enable it to sustain more than it would be capable of doing by itself; at the same time that the acid improves the medicine by increasing the roughness of the bark,

This last tincture, and that made with rectified spirit, have their advantages; though for general use, those above directed are the most convenient of any, the proof-spirit extracting nearly all the virtues of the bark. It may be given in doses of from a tea-spoonful to half an ounce, or an ounce, according to the different purposes it is intended to answer.

**TINCTURA CINCHONÆ, five
CORTICIS PERUVIANI,
COMPOSITA.**

Lond.

Compound Tincture of Peruvian Bark.

Take of

Peruvian bark, powdered, two
ounces;

Exterior peel of Seville oranges,
dried, one ounce and an half;

Virginian snake-root, bruised,
three drachms;

Saffron, one drachm;

Cochineal, powdered, two scruples;

Proof-spirit, twenty ounces.

Digest for fourteen days, and strain.

THIS has been for a considerable time celebrated under the title of *Huxham's tincture of bark*.

The substances here joined to the bark, in some cases, promote its efficacy in the cure of intermittents, and are sometimes absolutely necessary. In some ill habits, particularly where the viscera and abdominal glands are obstructed, the bark, by itself, proves unsuccessful, if not injurious; while given in conjunction with stimulating stomachics and deobstruents, it more rarely fails of the due effect. Orange peel and Virginian snake root are among the best additions for this pur-

purpose; to which it is thought by some necessary to join the chalybeate medicines also.

As a corroborant and stomachic, it is given in doses of two or three drachms: but when employed for the cure of intermittents, it must be taken to a greater extent. For this purpose, however, it is rarely employed, unless with those who are averse to the use of the bark in substance, or whose stomachs will not retain it under that form.

TINCTURA CINCHONÆ, five CORTICIS PERUVIANI, AMMONIATA.

Lond.

*Ammoniated Tincture of Peruvian
Bark.*

Take of

Peruvian bark, powdered, four
ounces;

Compound spirit of ammonia,
two pints.

Digest them in a close vessel for
ten days, and strain.

As proof spirit sufficiently extracts the qualities of the bark, this composition seems unnecessary.

TINCTURA CROCI.

Edin.

Tincture of Saffron.

Take of

English saffron, one ounce;

Proof spirit, fifteen ounces.

After digesting them for five days, let the tincture be strained through paper.

THE proof spirit is a very proper menstruum for extracting the medical virtues of the saffron, and affords a convenient mode of exhibiting that drug, the qualities of

which were mentioned in the *Materia Medica.*

TINCTURA FERRI MU. RIATI.

Lond.

Tincture of muriated Iron.

Take of

The rust of iron, half a pound;

Muriatic acid, three pounds;

Rectified spirit of wine, three
pints.

Pour the muriatic acid on the rust of iron in a glass vessel; and shake the mixture now and then during three days. Set it by that the feces may subside; then pour off the liquor; evaporate this to one pint, and, when cold, add to it the viscus spirit.

TINCTURA FERRI, vulgo TINCTURA MARTIS.

Edinb.

Tincture of Iron.

Take of

The scales of iron, purified and
powdered, three ounces;

Muriatic acid, as much as is sufficient to dissolve the powder.

Digest with a gentle heat; and the powder being dissolved, add of rectified spirit of wine as much as will make up of the whole liquor two pounds and a half.

OF these two formulæ, that of the Edinburgh college is, in several respects, intitled to the preference. The scales are much fitter for giving a proper solution than the rust. The strength of the muriatic acid is so variable, that the quantity is left to the judgement of the operator. If the acid be superabundant, the solution is of a green colour; if it be fully saturated with the iron, it is more or less of

of a reddish or yellow colour; and this serves as a pretty accurate criterion. As the muriatic acid combines less intimately with rectified spirit than any of the fossil acids, so the after-process of dulcification scarcely, if at all, impairs the solvent power of the acid; though, when the dulcification happens to be more than usually complete, a small quantity of ferrugineous matter is sometimes precipitated on adding rectified spirit to the solution. But as the rectified spirit increases the volatility of the acid, so if it was added at first, we should lose much more of the menstruum by the heat employed during the digestion. When this tincture is well prepared, it is of a yellowish red colour; if the acid be superabundant, it is more or less of a greenish hue; and if the rectified spirit has been impregnated with the astringent matter of oak casks, it assumes an inky colour.

All the tinctures of iron are no other than real solutions of the metal made in acids, and combined with visuous spirits. The tinctures here directed differ from each other only in strength, the acid being the same in both. In our former pharmacopœias, there was a tincture from the matter which remains after the sublimation of the martial flowers: which, though it appears to be a good one, is now expunged as superfluous. Some have recommended dulcified spirit of nitre as a menstruum; but though this readily dissolves the metal, it does not keep it suspended. The muriatic acid is the only one that can be employed for this purpose.

These tinctures are greatly preferable to the calces or croci of iron, as being not only more

speedy, but likewise more certain in their operation. The latter, in some cases, pass off through the intestinal tube with little effect; while the tinctures scarce ever fail. From ten to twenty drops of either of the tinctures may be taken twice or thrice a day, in any proper vehicle.

TINCTURA FERRI AMMONIACALIS.

Lond.

Ammoniac tincture of Iron.

Take of

Ammoniacal iron, four ounces;
Proof-spirit, one pint.

Digest and strain.

This is the old *tinctura storum martialis*, and is not near so elegant a preparation as the foregoing. Why it has been restored after having been omitted does not appear.

TINCTURA GALBANI.

Lond.

Tincture of Galbanum.

Take of

Galbanum, cut into small pieces,
two ounces;

Proof spirit, two pints.

Digest with a gentle heat for eight days, and strain.

THIS tincture is now for the first time introduced by the London college, and may be usefully employed for answering several purposes in medicine. Galbanum is one of the strongest of the fetid gums; and although less active, yet much less disagreeable than asafetida: and under the form of tincture it may be successfully employed in cases of flatulence and hystricia, where its effects are immediately

mediately required, particularly with those who cannot bear astringent.

are attended in other liquors, of rendering them untransparent.

TINCTURA GENTIANÆ. COMPOSITA.

Lond.

Compound tincture of Gentian.

Take of

Gentian root, sliced and bruised, two ounces;

Exterior dried peel of Seville oranges, one ounce;

Lesser cardamom seeds, husked and bruised, half an ounce;

Proof-spirit, two pints.

Digest for eight days, and strain.

TINCTURA AMARA, five
GENTIANÆ COMPOSITA,
vulgo ELIXIR STOMACHICUM.

Edin.

Bitter Tincture, or compound tincture of Gentian, commonly called Stomachic Elixir.

Take of

Gentian root, two ounces;

Seville orange-peel, dried, one ounce;

Canella alba, half an ounce;

Cochineal, half a drachm;

Proof-spirit, two pounds and a half.

Macerate for four days, and strain through paper.

THESE are very elegant spirituous bitters. As the preparations are designed for keeping, lemon peel, an excellent ingredient in the watery bitter infusions, has, on account of the perishableness of its flavour, no place in these. The aromatics are here very commodious ingredients, as in this spirituous menstruum they are free from the inconvenience with which they

TINCTURA GUAIACI, vulgo ELIXIR GUAIACINUM.

Edin.

Tincture of Guaiacum, commonly called Elixir of Guaiacum.

Take of

Gum guaiacum, one pound;

Rectified spirit of wine, two pounds and a half.

Digest for ten days, and strain.

THIS tincture may be considered as nearly agreeing in medical virtues with the two following. It is, however, less in use; but it may be employed with advantage in those cases where an objection occurs to the menstruum used.

Bitter Tincture, or compound tincture of Gentian, commonly called Stomachic Elixir.

TINCTURA GUAIACI.

Lond.

Tincture of Guaiacum.

Take of

Gum guaiacum, four ounces;

Compound spirit of ammonia, a pint and a half.

Digest for three days, and strain.

TINCTURA GUAIACI AMONIIATA, vulgo ELIXIR GUAIACINUM VOLATILE.

LE.

Edin.

Ammoniated tincture of Guaiacum, commonly called Volatile Elixir of Guaiacum.

Take of

Gum guaiacum, four ounces;

Distilled oil of sassafras, half a drachm;

Spirit of ammonia, a pound and a half.

Macerate

Macerate for six days in a close vessel, and strain.

These are very elegant and efficacious tinctures; the volatile spirit excellently dissolving the gum, and at the same time promoting its medicinal virtue. In rheumatic cases, a tea, or even table-spoonful, taken every morning and evening in any convenient vehicle, particularly in milk, has proved of singular service.

TINCTURA HELLEBORI NIGRI.

Lond.
Tincture of black Hellebore.

Take of
Black hellebore root, in coarse powder, four ounces;
Cochineal, powdered, two scruples;

Proof-spirit, two pints.
Digest with a gentle heat for eight days, and strain.

TINCTURA MELAMPODII, sive HELLEBORI NIGRI.

Edin.
Tincture of Melampodium, or black Hellebore.

Take of
Black hellebore root, four ounces;
Cochineal, half a drachm;
Proof-spirit, two pounds and a half.

Digest for eight days, and filter the tincture through paper.

This is perhaps the best preparation of hellebore, when designed for an alterative, the menstruum here employed extracting the whole of its virtues. It has been found, from experience, particularly serviceable in uterine obstructions: in sanguine constitutions,

where chalybeates are hurtful, it seldom fails of exciting the menstrual evacuations, and removing the ill consequences of their suppression. So great, according to some, is the power of this medicine, that wherever, from an ill confirmation of the parts, or other causes, the expected discharge does not succeed on the use of it, the blood, as Dr Mead has observed, is so forcibly propelled, as to make its way through other passages. A tea spoonful of the tincture may be taken twice a day in warm water or any other convenient vehicle.

TINCTURA JALAPII.

Lond.
Tincture of Jalap.

Take of
Powdered jalap root, eight ounces;
Proof-spirit, two pints.
Digest with a gentle heat for eight days, and strain.

TINCTURA JALAPPEÆ.

Edin.
Tincture of Jalap.

Take of
Jalap, in coarse powder, three ounces;
Proof-spirit, fifteen ounces.
Digest them for eight days, and strain the tincture.

RECTIFIED spirit of wine was formerly ordered for the preparation of this tincture; but rectified spirit dissolving little more than the pure resinous parts of the jalap, rendered the use of the medicine somewhat less commodious than that of the tincture prepared with proof spirits. Most of the tinctures made in rectified spirit, diluted

diluted with water, so as to be fit for taking, form a turbid white mixture. Many of them are safely taken in this form, without any further addition: but the cathartic ones are never to be ventured on without an admixture of syrup or mucilage to keep the resin united with the liquor; for if it separates in its pure undivided state, it never fails to produce violent gripes.

Some have preferred to the tinctures of jalap, a solution in spirit of wine of a known quantity of the resin extracted from the root; and observe that this solution is more certain in strength than any tincture that can be drawn from the root directly. For, as the purgative virtue of jalap resides in its resin, and as all jalap appears from experiment not to be equally resinous, some sorts yielding five, and others not three, ounces of resin from sixteen, it follows, that although the root be always taken in the same proportion to the menstruum, and the menstruum always exactly of the same strength, it may, nevertheless, according to the degree of goodness of the jalap, be impregnated with different quantities of resin, and consequently prove different in degree of efficacy. Though this objection against the tincture does not reach so far as some seem to suppose, it certainly behoves the apothecary to be careful in the choice of the root. The inferior sorts may be employed for the making *resina jalappe*, which they yield in as great perfection, though not in so large quantity, as the best. Neumann thinks even the worm-eaten jalap as good for that purpose as any other.

TINCTURA KINO.

Edinb.

Tincture of Gum Kino.

Take of

Gum kino. two ounces;

Proof spirit, a pound and a half.

Digest eight days, and strain.

THE substance called *gum kino* seems to be really a gum-resin; on which account proof spirit is its most proper menstruum. This preparation must therefore possess the virtues of the substance; and it is one of the best forms under which it can be exhibited in obdurate diarrhoeas, and in cases of lenteria: but in hemorrhagies, it is in general proper to exhibit it either in substance or dissolved.

SPIRITUS LAVENDULÆ COMPOSITA.

Lond.

Compound Spirit of Lavender.

Take of

Spirit of lavender, three pints;

Spirit of rosemary, one pint;

Cinnamon, bruised,

Nutmegs, bruised, of each half an ounce;

Red Saunders, one ounce.

Digest for ten days, and strain.

SPIRITUS LAVENDULÆ COMPOSITUS.

Lond.

Compound Spirit of Lavender.

Take of

Simple spirit of lavender, three pounds;

Simple spirit of rosemary, one pound;

Cinnamon, one ounce;

Cloves, two drachms;

Nutmeg,

Nutmeg, half an ounce ;
Red Saunders, three drachms.
Macerate seven days, and strain.

TINCTURA MYRRHÆ.

*Edin.**Tincture of Myrrh.*

THESE two compositions although varying a little from each other, may be considered as the same.

These spirits are grateful reviving cordials : though considerably more simple, they are not less elegant or valuable, than many other more elaborate preparations ; which have been long held in great esteem, under the name of Palsy drops, in all kinds of languors, weakness of the nerves, and decays of age.

Take of

Myrrh, three ounces ;
Proof spirit, two pounds and a half.

After digestion for ten days, strain off the tincture.

THE pharmaceutical writers in general have been of opinion, that no good tincture can be drawn from myrrh by spirit of wine alone, without the assistance of fixed alkaline salts. But it appears from proper experiments, that these salts only heighten the colour of the tincture, without enabling the menstruum to dissolve any more than it would by itself. Rectified spirit extracts, without any addition, all that part of the myrrh in which its peculiar smell and taste reside, viz. the resin : and proof-spirit dissolves almost the whole of the drug, except its impurities : hence the combination of these two, directed by the London college, is perhaps preferable to either by itself.

Tincture of myrrh is recommended internally for warming the habit, strengthening the solids, opening obstructions, and resisting putrefaction. The dose is from fifteen drops to forty or more. The medicine may doubtless be given in these cases to advantage ; though with us, it is more commonly used externally, for cleaning foul ulcers, and promoting the exfoliation of carious bones.

TINCTURA MOSCHI.

*Edin.**Tincture of Musk.*

Take of

Musk, two drachms ;
Rectified spirit of wine, one pound.

Digest for ten days, and strain.

RECTIFIED spirit is the most complete menstruum for musk ; but in this form it is often impossible to give such a quantity of the musk as is necessary for our purpose ; and hence this article is more frequently employed under the form of julep or bolus.

TINCTURA MYRRHÆ.

*Lond.**Tincture of Myrrh.*

Take of

Myrrh, bruised, three ounces ;
Proof-spirit, a pint and an half ;
Rectified spirit of wine, half a pint.

Digest with a gentle heat for eight days, and strain.

3 Q

TINC-

TINCTURA OPII.

Lond.

Tincture of Opium.

Take of

Hard purified opium, powdered,
ten drachms;

Proof-spirit, one pint.

Digest for ten days, and strain.

TINCTURA OPII, five THE-
BAICA; vulgo LAUDANUM
LIQUIDUM.

Edin.

*Tincture of Opium, or Thebaic tinc-
ture, commonly called Liquid
Laudanum.*

Take of

Opium, two ounces;

Proof-spirit, two pounds.

Digest four days, and strain off the
tincture.

THESE are very elegant liquid opiates, and as they are now directed by both the pharmacopœias, they are of the same strength, or contain the same proportion, of opium; a drachm of each tincture containing, as is found by evaporating the tincture, three grains and an half of pure opium.

Objections had formerly been made to these liquid opiates which contain so large a proportion of opium, as the dose of them was very uncertain in the usual manner of giving it by drops, drops being sometimes (as when dropt from a phial with a thick lip) much larger than at others. To remedy this inconvenience the Edinburgh college have adopted measures for proportioning the doses by weight. See page 57.

TINCTURA OPII CAMPHORATA.

Lond.

Camphorated Tincture of Opium.

Take of

Hard purified opium,

Flowers of benzoin, of each one
drachm;

Camphor, two scruples;

Oil of aniseed, one drachm;

Proof-spirit, two pints.

Digest for ten days, and strain.

TINCTURA OPII AMMONI-
ATA, vulgo ELIXIR PAR-
EGORICUM.

Edin.

*Ammoniated Tincture of Opium, com-
monly called Pargoric Elixir.*

Take of

Acid of benzoin,
English saffron, of each three
drachms;

Opium, two drachms;

Distilled oil of aniseeds, half a
drachm;

Spirit of ammonia, sixteen ounces.

Digest four days in a close vessel, and strain.

THESE two preparations, though they differ in their composition, are nevertheless nearly of the same medical qualities.

The most material differences in the last formula from the first, are the substitution of the spirit of ammonia for the proof spirit, and a larger proportion of opium; the spirit of ammonia is not only, perhaps, a more powerful menstruum, but in most instances coincides with the virtues of the preparation; but as the opium is the ingredient on which we place the principal dependance, so its proportion is increased, in order that

that we may give it in such a dose as that the acrimony of the menstruum shall not prove hurtful to the stomach.

The London formula is taken from *Le Mort*, with the omission of three unnecessary ingredients, honey, liquorice, and alkaline salt. It was originally called *ELIXIR ASTHMATICUM*, which name it does not ill deserve. It contri- butes to allay the tickling which provokes frequent coughing; and at the same time is supposed to open the breast, and give greater liberty of breathing; the opium procures a temporary relief from the symptoms; while the other ingredients tend to remove the cause, and prevent their return. It is given to children against the chincough, &c. in doses of from five drops to twenty; to adults, from twenty to an hundred. In the London formula, half an ounce by measure contains about a grain of opium; but in the Edinburgh formula, the proportion of opium is larger.

TINCTURA RHABARBARI.

*Lond.**Tincture of Rhubarb.*

Take of

Rhubarb, sliced, two ounces;
Lesser cardamom seeds, bruised,
half an ounce;
Saffron, two drachms;
Proof-spirit, two pints.

Digest for eight days, and strain.

TINCTURA RHEI.

*Edin.**Tincture of Rhubarb.*

Take of

Rhubarb, three ounces;
Lesser cardamom seeds, half an
ounce;

Proof-spirit, two pounds and a
half.
Digest for seven days, and strain.

TINCTURA RHABARBARI
COMPOSITA.*Lond.**Compound tincture of Rhubarb.*

Take of

Rhubarb, sliced, two ounces;
Ginger, powdered,
Saffron, each two drachms;
Liquorice-root, bruised, half an
ounce;
Distilled water, one pint;
Proof-spirit, twelve ounces by
measure.

Digest for fourteen days, and strain.

TINCTURA RHEI AMARA.

*Edin.**Bitter tincture of Rhubarb.*

Take of

Rhubarb, two ounces;
Gentian-root, half an ounce;
Virginian snake-root one
drachm;
Proof-spirit, two pounds and a
half.

Digest for seven days, and strain.

TINCTURA RHEI DULCIS.

*Edin.**Sweet Tincture of Rhubarb.*

It is made by adding to the strained
tincture of rhubarb, four ounces
of sugar-candy.

THE last of these preparations
is improved from the former edi-
tions. Two ounces of liquorice
and one of raisins are supplied by
an increase of the sugar-candy.

All the foregoing tinctures of
rhubarb are designed as stomachics
and corroborants, as well as purga-
tives: spirituous liquors excellent-
ly extract those parts of the rhu-
barb

barb in which the two first qualities reside, and the additional ingredients considerably promote their efficacy. In weakness of the stomach, indigestion, laxity of the intestines, diarrhoeas, colic and other similar complaints, these medicines are frequently of great service: the fourth is also in many cases, an useful addition to the Peruvian bark, in the cure of intermittents, particularly in cachectic habits, where the viscera are obstructed; with these intentions, a spoonful or two may be taken for a dose, and occasionally repeated.

**TINCTURA RHEI CUM
ALOE, vulgo ELIXIR
SACRUM.**

Edin.

Tincture of Rhubarb with aloe, commonly called Sacred Elixir.

Take of

Rhubarb, ten drachms;

Socotorine aloes, six drachms;

Lesser cardamom-seeds, half an ounce;

Proof spirit, two pounds and a half.

Digest for seven days, and strain.

THIS preparation is very much employed as a warming cordial purge, and for the general purposes of aloetics; with which, however, it combines the medical properties of rhubarb.

**TINCTURA SABINÆ COM-
POSITA.**

Lond.

Compound Tincture of Savin.

Take of

Extract of savin, one ounce;

Tincture of Castor, one pint;

Tincture of myrrh, half a pint.

Digest till the extract of savin be dissolved, and then strain.

THIS preparation had a place in a late edition of our pharmacopœia, under the title of *Elixir myrrhe compositum*; and is an improvement of one described in some former pharmacopœias under the name of *ELIXIR UTERINUM*. It is a medicine of great importance in uterine obstructions, and in hypochondriacal cases; though, possibly, means might be contrived of superadding more effectually the virtues of savin to a tincture of myrrh and castor. It may be given in doses of from five drops to twenty or thirty, or more, in penny-royal water, or any other suitable vehicle.

TINCTURA SCILLÆ.

Lond.

Tincture of Squill.

Take of

Squills, fresh dried, four ounces;

Proof-spirit, two pints.

Digest for eight days, and pour off the liquor.

FOR extracting the virtues of squills, the menstruum which has hitherto been almost solely employed is vinegar. There are, however, cases in which ardent spirit may be more proper; and by the menstruum here directed its virtues are fully extracted; hence it is with propriety that the London college have introduced this form, as well as the vinegar and oxymel; but, in general, the purposes to be answered by squills may be better obtained by employing it in substance than in any other form.

TINC-

TINCTURA SENNÆ.

Lond.

Tincture of Senna.

Take of

Senna, one pound ;
Caraway-seeds, bruised, one
ounce and an half ;
Lesser cardamom-seeds, bruised,
half an ounce ;
Raisins, stoned, sixteen ounces ;
Proof-spirit, one gallon.
Digest for fourteen days, and
strain.

TINCTURA SENNÆ COM-
POSITA, vulgo ELIXIR SA-
LUSÆ.

Edinb.

*Compound tincture of Senna, com-
monly called Elixir of health.*

Take of

Senna leaves, two ounces ;
Jalap root, one ounce ;
Coriander seeds, half an ounce ;
Proof-spirit, three pounds and a
half.

Digest for seven days, and to the
strained liquor add four ounces
of sugar-candy.

BOTH these tinctures are useful
in catarrhes and cathartics, espe-
cially to those who have accus-
tomed themselves to the use of spi-
rituous liquors; they oftentimes
relieve flatulent complaints and
colics, where the common cor-
dials have little effect: the dose
is from one to two ounces.
Several preparations of this kind
have been offered to the public
under the name of Daffy's elixir:
the two here described are equal
to any, and superior to most of
them. The last in particular is
a very useful addition to the castor
oil, in order to take off its mawkish
taste: and coinciding with the

virtues of the oil, it is therefore
much preferable to brandy, shrub,
and such like liquors, which are
often found necessary to make
the oil sit on the stomach.

TINCTURA SERPENTÆ.

RIÆ.

Lond.

Tincture of Snake-root.

Take of

Virginian snake root, three oun-
ces ;

Proof-spirit, two pints.

Digest for eight days, and strain.

Edinb.

Take of

Virginian snake root, two oun-
ces ;

Cochineal, one drachm ;

Proof-spirit, two pounds and a
half.

Digest for four days, and then
strain the tincture.

THE tincture of snake-root was
in a former pharmacopœia directed
to be prepared with the *tinctura
salis tartari*, which being now ex-
punged, it was proposed to the
college to employ rectified spirit;
but as the heat of this spirit prevents
the medicine from being taken in
so large a dose as it might other-
wise be, a weaker spirit was
chosen. The tincture made in
this menstruum, which extracts
the whole virtues of the root, may
be taken to the quantity of a
spoonful or more every five or six
hours; and to this extent it often
operates as an useful diaphore-
tic.

TINC-

TINCTURA VALERIANÆ. Macerate for six days in a close vessel, and strain.

Lond.
Tincture of Valerian.

Take of

The root of wild valerian, in coarse powder, four ounces;

Proof spirit, two pints.
Digest with a gentle heat for eight days, and strain.

THE menstrua here employed are excellent, and at the same time considerably promote the virtues of the valerian, which in some cases wants an assistance of this kind. The dose may be a tea-spoonful or two.

THE valerian root ought to be reduced to a pretty fine powder, otherwise the spirit will not sufficiently extract its virtues. The tincture proves of a deep colour, and considerably strong of the valerian; though it has not been found to answer so well in the cure of epileptic disorders as the root in substance, exhibited in the form of powder, or bolus. The dose of the tincture is, from half a spoonful to a spoonful or more, twice or thrice a day.

TINCTURA VERATRI, sive HELLEBORI ALBI.

Edinb.
Tincture of Veratrum, or white Hellebore.

Take of

White hellebore root, eight ounces;

Proof spirit, two pounds and a half.

Digest them together for ten days, and filter through paper.

THIS tincture is sometimes used for acuating cathartics, &c. and as an emetic in apoplectic and maniacal disorders. It may likewise be so managed, as to prove a powerful alterative and deobstruent, in cases where milder remedies have little effect; but a great deal of caution is requisite in its use: the dose, at first, ought to be only a few drops; if considerable, it proves violently emetic or cathartic.

TINCTURA VALERIANÆ AMMONIATA.

Lond.
Ammoniated Tincture of Valerian.

Take of

The root of wild valerian in coarse powder, four ounces;

Compound spirit of ammonia, two pints.

Digest for eight days, and strain.

TINCTURA VALERIANÆ AMMONIATA, vulgo TINCTURA VALERIANÆ VOLATILIS.

Edin.
Ammoniated Tincture of Valerian, commonly called Volatile tincture of Valerian.

ACIDUM VITRIOLI AROMATICUM, vulgo ELIXIR VITRIOLI ACIDUM.

Edinb.
Aromatic acid of vitriol, commonly called Acid Elixir of Vitriol.

Take of

Wild valerian root, two ounces;

Spirit of ammonia, one pound.
Drop into it by little and little six ounces

Take of
Rectified spirit of wine, two pounds;

ounces of vitriolic acid; digest the mixture with a very gentle heat in a close vessel for three days, and then add of Cinnamon, an ounce and a half; Ginger, one ounce. Digest again in a close vessel for six days, and then filter the tincture through paper in a glass funnel.

The intention in this process is, to obtain a tincture of aromatic vegetables, in spirit of wine, combined with a considerable proportion of vitriolic acid. When the tincture is first drawn with vinous spirit, and the acid added afterwards, the acid precipitates great part of what the spirit had before taken up: and on the other hand, when the acid is mixed with the spirit immediately before the extraction, it prevents the dissolution of all that it would have precipitated by the former way of treatment; by previously uniting the acid and the vinous spirit together by digestion, the inconvenience is somewhat lessened.

This is a valuable medicine in weakness and relaxations of the stomach, and decays of constitution, particularly in those which proceed from irregularities, which are accompanied with slow febrile symptoms, or which follow the suppression of intermittents. It frequently succeeds after bitters and aromatics by themselves had availed nothing; and indeed, great part of its virtues depend on the vitriolic acid; which, barely diluted with water, has in these cases, where the stomach could bear the acidity, produced happy effects.

Fuller relates (in his *Medicina Gymnastica*) that he was recovered by Myrsicht's elixir, which was formerly the name of this

compound, from an extreme decay of constitution, and continual retchings to vomit. It may be given in doses of from ten to thirty or forty drops or more, according to the quantity of acid, twice or thrice a-day, at such times as the stomach is most empty. It is very usefully conjoined with the bark, both as covering its disagreeable taste and coinciding with its virtues.

SPIRITUS ÆTHERIS VITRIOLICI AROMATICUS, vulgo ELIXIR VITRIOLI DULCE.

Edinb.

Aromatic spirit of vitriolic ether, commonly called Sweet Elixir of Vitriol.

This is made of the same aromatics, and in the same manner as the tinctura aromatica; except that, in place of the vinous spirit, spirit of vitriolic ether is employed.

THIS is designed for persons whose stomachs are too weak to bear the foregoing acid elixir; to the taste, it is gratefully aromatic, without any perceptible acidity. The dulcified spirit of vitriol, here directed, occasions little or no precipitation on adding it to the tincture.

A medicine of this kind was formerly in great esteem under the title of *Vigani's volatile elixir of vitriol*; the composition of which was first communicated to the public in the *Pharmacopœia reformata*. It is prepared by digesting some volatile spirits of vitriol upon a small quantity of dried mint leaves till the liquor has acquired a fine green colour. If the spirit, as it frequently does, partakes too much of the acid, this

this colour will not succeed : in such case, it should be rectified by the addition of a little fixed alkaline salt.

Proof-spirit, two pounds and an half.
Digest for three days, and then strain through paper.

TINCTURA ZINZIBERIS.

Land.
Tincture of Ginger.

Take of

Ginger, powdered, two ounces ;
Proof-spirit, two pounds.
Digest in a gentle heat for eight days, and strain.

By proof spirit the medical properties, as well as the sensible qualities of the quassia, are readily extracted ; and under this form it may be advantageously employed for answering different purposes in medicine.

TINCTURA LACCÆ.

Succ.
Tincture of Lac.

Take of

Gum lac, powdered, one ounce ;
Myrrh, three drachms ;
Spirit of scurvy-grass, a pint and an half.

Digest in a sand heat for three days ; after which, strain off the tincture for use.

Tincture of Colocynth.

TINCTURA COLOCYNTHIDIS.

Succ.

Take of

Colocynth, cut small, and freed from the seeds, one ounce ;
Aniseed, one drachm ;
Proof-spirit, fourteen ounces.
Macerate for three days, and strain through paper.

This tincture is principally employed for strengthening the gums, and in bleedings and scorbutic exulcerations of them ; it may be fitted for use with these intentions, by mixing it with honey of roses, or the like. Some recommend it internally against scorbutic complaints, and as a corroborant in gleet, female weaknesses, &c. Its warmth, pungency, and massively astrigent bitterish taste, point out its virtues in these cases to be considerable, though common practice among us has not yet received it.

In this tincture we have the active purgative power of the colocynth. And although it be seldom used as a cathartic by itself, yet even in small quantity it may be advantageously employed to brisken the operation of others.

TINCTURA QUASSIÆ.

Succ.
Tincture of Quassia.

Take of

Quassia, bruised, two ounces ;

TINC.

TINCTURA NUCIS VOMICÆ.

Ros.
Tincture of Nux Vomica.

Vitriolic ether, four ounces.
Digest for three days in a vessel accurately closed, frequently shaking the vessel, and after this strain through paper.

Take of

Nux vomica, an ounce and a half;

Proof spirit, two pounds.

Digest for some days, and then strain it.

THE nux vomica, a very acrid vegetable, has of late, as we have already had occasion to observe, been introduced into practice for the cure of intermittents and of contagious dysentery. In these affections it may be employed under the form of tincture as well as in substance; and in this way it most readily admits of being combined with other articles, either as adjuvantia or corrigentia.

TINCTURA SUCCINI.

Succ.

Tincture of Amber.

Take of

Yellow amber, powdered, one ounce;

THE tincture of amber was formerly prepared with rectified spirit of wine: but the menstruum here directed gives a more complete solution, and forms a more elegant and active tincture. It possesses the whole virtues of the concrete; and although it has no place in our Pharmacopœia, yet it is a valuable preparation of amber. It has been recommended in a variety of affections, particularly those of the nervous kind, as hysterical and epileptic complaints. It may be taken in doses of from a few drops to the extent of a tea-spoonful in a glass of wine or any similar vehicle.

C H A P. XXII.

M I S T U R E.

M I X T U R E S.

MISTURA CAMPHORATA.

*Lond.**Camphorated Mixture.*

Take of

Camphor, one drachm;

Rectified spirit of wine, a little;

Double-refined sugar, half an ounce;

Boiling distilled water, one pint.

Rub the camphor first with the spirit of wine, then with the sugar; lastly, add the water by degrees, and strain the mixture.

WHILE camphor is often exhibited in a solid state, it is frequently also advantageous to employ it as diffused in watery fluids; and with this intention the present formula is perhaps one of the most simple, the union being effected merely by the aid of a small quantity of spirit of wine and a little sugar. The form of emulsion in which the union is effected, by triturating the camphor with a few almonds, is much superior to this; for the unctuous quality of the almonds serves in a considerable degree to cover the pungency of

the camphor, without diminishing its activity, (See EMULSIO CAMPHORATA). Camphor, under the present form as well as that of emulsion, is very useful in fevers, taken to the extent of a table-spoonful every three or four hours. It is a curious quantity of spirit which the London college has ordered; more especially since in a former edition the quantity of spirit was specified, viz. ten drops.

MISTURA CRETACEA.

*Lond.**Chalk Mixture.*

Take of

Prepared chalk, one ounce;

Double-refined sugar, fix drachms;

Gum Arabic, powdered, one ounce;

Distilled water, two pints.

Mix them.

POTIO CRETACEA.

*Edinb.**Chalk Potton.*

Take of

Prepared chalk, one ounce;

Purest refined sugar, half an ounce;
Mucilage

Mucilage of gum Arabic, two ounces.

Rob them together, and add by degrees,

Water, two pounds and an half;
Spirit of cinnamon, two ounces.

THESE two preparations agree pretty much both in their name and in their nature; but that of the Edinburgh college is most agreeable to the palate, from containing a proportion of cinnamon water, by which the disagreeable taste of the chalk is taken off.

In the former edition of the Edinburgh pharmacopœia, a preparation of this kind stood among the decoctions, and the chalk was directed to be boiled with the water and gum: by the present formula, the chalk is much more completely suspended by the mucilage and sugar; which last gives also to the mixture an agreeable taste. It is proper to employ the finest sugar, as the redundant acid in the coarser kinds might form with the chalk a kind of earthy salt.

This is a very elegant form of exhibiting chalk, and is an useful remedy in diseases arising from, or accompanied with, acidity in the primæ viæ. It is frequently employed in diarrhœa proceeding from that cause. The mucilage not only serves to keep the chalk uniformly diffused, but also improves its virtues by sheathing the internal surface of the intestines. The dose of this medicine requires no nicety. It may be taken to the extent of a pound or two in the course of a day.

MISTURA MOSCHATA.

Lond.

Musk Mixture.

Take of

Musk, two scruples;

Gum Arabic, powdered,

Double refined sugar, of each one drachm;

Rose-water, six ounces by measure.

Rob the musk first with the sugar, then with the gum, and add the rose water by degrees.

THIS had formerly the name of *Julepum e moscho*, and was intreated as an improvement upon the *Hysseric julep with musk* of Bates. Orange-flower water is directed by that author; and indeed this more perfectly coincides with the musk than rose-water: but as the former is difficultly procurable in perfection, the latter is here preferred. The julep appears turbid at first: on standing a little time, it deposits a brown powder, and becomes clear, but at the same time loses great part of its virtue. This inconvenience may be prevented by thoroughly grinding the musk with gum Arabic before the addition of the water; by means of the gum, the whole substance of the musk is made to remain suspended in the water. Volatile spirits are in many cases an useful addition to musk, and likewise enable water to keep somewhat more of the musk dissolved than it would otherwise retain.

LAC AMYGDALÆ.

Lond.

Almond Milk.

Take of

Sweet almonds, one ounce and an half;

Doubles

Double-refined sugar, half an ounce;

Distilled water, two pints.

Beat the almonds with the sugar; then, rubbing them together, add by degrees the water, and strain the liquor.

EMULSIO COMMUNIS.

Edin.

Common Emulsion.

Take of

Sweet almonds, one ounce;

Common water, two pounds and a half.

Beat the blanched almonds in a stone mortar, and gradually pour on them the common water, working the whole well together; then strain off the liquor.

EMULSIO ARABICA.

Edin.

Arabic Emulsion.

This is made in the same manner as the preceding; only adding, while beating the almonds,

Mucilage of gum arabic, two ounces.

ALL these may be considered as possessing nearly the same qualities. But of the three the last is the most powerful demulcent.

Great care should be taken, that the almonds be not become rancid by keeping; which will not only render the emulsion extremely unpleasant, a circumstance of great consequence in a medicine that requires to be taken in large quantities, but likewise give it injurious qualities.

These liquors are principally used for diluting and obviating acrimonious humours; particularly in heat of urine and stranguries

arising either from a natural sharpness of the juices, or from the operation of cantharides, and other irritating medicines: in these cases, they are to be drank frequently, to the quantity of half a pint or more at a time.

Some have ordered emulsions to be boiled, with a view to deprive them of some imaginary crudity; but by this process they quickly cease to be emulsions, the oil separating from the water, and floating distinctly on the surface. Acids and vinous spirits produce a like decomposition. On standing also for some days, without addition, the oily matter separates and rises to the top, not in a pure form, but like thick cream. These experiments prove the composition of the emulsions made from the oily seeds of kernels, and at the same time point out some cautions to be attended to in their preparation and use.

EMULSIO CAMPHORATA.

Edin.

Camphorated Emulsion.

Take of

Camphor, one scruple;

Sweet almonds, blanched, ten;

Double-refined sugar, one dram;

Water, six ounces.

This is to be made in the same manner as the common emulsion.

THIS is a much better preparation for exhibiting camphor in a liquid form than the *missura camphorata* above described, the almonds being an excellent medium not only for dividing the camphor, but for keeping it suspended in the water.

LAC

LAC AMMONIACI.

Lond.
Ammoniacum Milk.

Take of

Ammoniacum, two drachms;

Distilled water, half a pint.

Rub the gum-resin with the water, gradually poured on, until it becomes a milk.

In the same manner may be made a milk of asafetida, and of the rest of the gum-resins.

The ammoniacum milk is used for promoting expectoration, in humoral asthma, and coughs. It may be given to the quantity of two spoonfuls twice a day.

The lac asafetidæ is employed in spasmodical, hysterical, and other nervous affections; and it is also frequently used under the form of injection. It answers the same purpose as asafetida in substance.

SPIRITUS ÆTHERIS VITRIOLICI COMPOSITUS.

Lond.

Compound Spirit of Vitriolic Ether.

Take of

Spirit of vitriolic ether, two pounds;

Oil of wine, three drachms.

Mix them.

THIS is supposed to be, if not precisely the same, at least very nearly, the celebrated *Liquor anodynus mineralis* of Hoffman. We learn from his own writings, that the liquor which he thus denominated, was formed of dulcified spirit of vitriol and the aromatic oil which arises after it; but he does not tell us in what proportions these were combined. It has been highly extolled as an anodyne and antispasmodic medi-

cine: and with these intentions it is frequently employed in practice.

SPIRITUS AMMONIÆ COMPOSITUS.

Lond.

Compound Spirit of Ammonia.

Take of

Spirit of ammonia, two pints;

Essential oil of lemon, nutmeg, of each two drachms.

Mix them.

THIS differs almost only in name from the following.

SPIRITUS AMMONIÆ AROMATICUS, vulgo SPIRITUS SALINUS AROMATICUS.

Edin.

Aromatic Spirit of Ammonia, commonly called Saline aromatic spirit.

Take of

Spirit of ammonia, eight ounces;

Distilled oil of rosemary, one drachm and a half;

Distilled oil of lemon-peel, one drachm.

Mix them that the oils may be dissolved.

By the method here directed, the oils are as completely dissolved as when distillation is employed.

Volatile salts, thus united with aromatics, are not only more agreeable in flavour, but likewise more acceptable to the stomach, and less acrimonious than in their pure state. Both the foregoing compositions turn out excellent ones, provided the oils are good. The dose is from five or six drops to sixty or more.

SPI-

SPIRITUS AMMONIÆ SUC-
CINATUS.SPIRITUS VINOSUS CAM-
PHORATUS.

Lond.

Edinb.

Succinated Spirit of Ammonia.

Camphorated Spirit of Wine.

Take of

Alcohol, one ounce ;

Water of pure ammonia, four
ounces, by measure ;Rectified oil of amber, one scrup-
le ;

Sops, ten grains.

Digest the sops and oil of amber
in the alcohol till they be dis-
solved ; then add the water of
pure ammonia, and mix them by
shaking.

THIS composition is extremely penetrating, and has been long in great esteem, particularly for smelling to in townesses and faintings, under the name of *Eau de luce*. It is not quite limpid, for the oil of amber dissolves only imperfectly in the spirit : and if the volatile spirit be not exceedingly strong, scarcely any of the oil will be imbibed.

The *Eau de luce* is not only used with the view of making an impression on the nose, but is taken internally in the same cases. It has likewise of late been celebrated as a remedy for the bite of the rattle-snake, when used internally, and applied externally to the wounded part.

SPIRITUS CAMPHORA-
TUS.

Lond.

Camphorated Spirit.

Take of

Camphor, four ounces ;

Rectified spirit of wine, two
pints ;Mix them, so that the camphor
may be dissolved.

Take of

Camphor, one ounce ;

Rectified spirit of wine, one
pound.Mix them together, that the cam-
phor may be dissolved.It may also be made with a double,
triple, &c. proportion of cam-
phor.

THESE solutions of camphor are employed chiefly for external uses, against rheumatic pains, paralytic numbnesses, inflammations, for dissolving tumors, preventing gangrenes, or restraining their progress. They are too pungent to be exhibited internally, even when diluted, nor does the dilution succeed well ; for on the admixture of aqueous liquors, the camphor gradually separates and runs together into little masses.

Hoffman, Rothen, and others, mention a camphorated spirit not subject to this inconvenience. It is prepared by grinding the camphor with somewhat more than an equal weight of fixed alkaline salt, then adding a proper quantity of proof-spirit, and drawing off one half of it by distillation. This spirit was proposed to be received into our pharmacopœias, under the title of *Spiritus camphoræ tartarisatus* ; but on trial, it did not answer expectation : some of the camphor rises with the spirit in distillation, though but a small quantity ; whence, mixed with a large portion of water, it does not sensibly render it turbid ; but in a proper quantity, it exhibits the same appearance as the more common camphorated spirit : it did not appear,

appear, that spirit distilled from camphor, with or without the alkaline salt, differed at all in this respect.

The most convenient method of using camphor with aqueous liquors, for internal use, seems to be by the mediation of almonds, or of mucilages; triturated with these, it readily mixes with water into the form of an emulsion, at the same time that its pungency is considerably abated. It may also be commodiously exhibited in the form of an oily draught, expressed oils totally dissolving it.

OLEUM CAMPHORATUM.

Edin.

Camphorated Oil.

Take of

Fresh olive oil, two ounces;

Camphor, half an ounce.

Mix them so that the camphor may be dissolved.

This is designed for external purposes, and is useful against burns, bruises, rheumatic pains, &c.

EMULSIO OLEOSA SIMPLEX.

Gen.

Simple oily Emulsion.

Take of

Almond oil, one ounce;

Syrup of marsh mallows, an ounce and a half;

Gum arabic, half an ounce;

Spring water, six ounces.

Mix, and make an emulsion according to art.

EMULSIO OLEOSA VOLATILIS.

Gen.

Volatile oily Emulsion.

Take of

Almond oil, an ounce and a half;

Syrup of marsh mallow, one ounce;

Gum arabic, half an ounce;

Volatile alkali, one drachm;

Spring water, seven ounces.

Mix them according to art.

BOTH these are elegant and convenient modes of exhibiting oil internally; and under these forms it is often advantageously employed in cases of cough, hoarseness, and similar affections. By means of the alkali, a more intimate union of oil with water is obtained than can be had with the intermedium either of syrup or vegetable mucilage; and in some cases, the alkali contributes both to answer the intention in view, and to prevent the oil from exciting sickness: But in other instances, the pungency which it imparts is disagreeable to the patient, and unfavourable to the disease. According to these circumstances, therefore, where an oily mixture is to be employed, the practitioner will have recourse either to the one or the other formula.

JULAPIUM ACIDUM.

Gen.

Acid Julep.

Take of

Weak vitriolic acid, three drachms;

Simple syrup, three ounces;

Spring water, two pounds.

Mix them.

Is

IN this state, the vitriolic acid is sufficiently diluted to be taken with ease in considerable doses. And it may thus be advantageously employed in various affections; concerning which we have already had occasion to make some remarks in the *Materia Medica*, and which are to be answered, either by its action on the stomach, or on the system in general.

JULAPIUM ÆTHEREUM.

Gen.

Ether Julep

Take of

Pure vitriolic ether, two scruples;

Spring water, six ounces;

Refined sugar, half an ounce.

Mix them according to art.

ALTHOUGH it is in general proper that ether should be diluted only when it is to be immediately used, yet it is sometimes necessary that it should be put into the hands of the patient in the state in which it is to be taken. In such instances the present formula is a very proper one; and the addition of a little sugar tends both to cover the pungency of the ether in the mouth, and to retain it in a state of mixture with the water.

JULAPIUM SUCCINATUM.

Gen.

Amber Julep.

Take of

Tincture of amber, two drachms;

Refined sugar, half an ounce;

Spring water, six ounces.

Mix them according to art.

UNDER this form, the tincture

of amber is so far diluted and sweetened, as to form an agreeable mixture; and in this manner it may often be advantageously employed for counteracting nervous affections, and answering those other purposes for which we have already mentioned that this article is had recourse to in practice.

MIXTURA SALINA.

Succ.

Saline Mixture, or Julep.

Take of

Fixed vegetable alkali, three drachms;

River water, half a pound.

To this lixivum add,

Lemon juice, half a pound, or

as much as is sufficient to saturate the alkali;

Syrup of black currants, one ounce.

THIS mixture is frequently prescribed in febrile diseases as a means of promoting a slight discharge by the surface: For where the skin is parched with great increased heat, it generally operates as a gentle diaphoretic. It often also promotes a discharge by urine, and is frequently employed to relieve in vomiting. With these intentions it is in daily use among us, although it has no place in our pharmacopœias, from its being entirely an extemporaneous prescription.

SOLUTIO MINERALIS

ARSENICI.

Mineral Solution of Arsenic.

Take of

White arsenic, reduced to a subtiler powder,

Fixed vegetable alkali, each sixty-four grains;

Distilled water, half a pint.

Put

Put them into a florentine flask, and let this be placed in a sand heat, so that the water may boil gently till the arsenic be completely dissolved; then add to the solution when cold half an ounce of spirit of lavender, and as much distilled water as to make the solution amount to a pint.

For the introduction of this remedy we are indebted to Dr Fowler of Stafford. We have already had occasion to mention it when treating of arsenic in the *Materia Medica*: and we then observed, that if it be not precisely the same, it is at least supposed to be very analogous to a remedy which has had a very extensive sale in some parts of England under the name of the *Tasteless ague drop*; and which has been employed with very great success in the cure of obstinate intermittents; but whether the present

formula in any degree approaches to the tasteless ague drop or not, there can be no doubt, from the concurring testimony of many eminent practitioners, that it is equally successful in combating intermittents. For this purpose it is given, according to the age and other circumstances of the patient, in doses of from two to twenty drops, once, twice, or oftener, in the course of the day: And its use has been found to be attended with remarkable success, although with some patients even very small doses have been found to excite severe vomiting. Besides distinctly marked intermittents, this solution has also been sometimes successful in obstinate periodical headachs, and in cutaneous affections of the leprous kind, resisting every other mode of cure: and in every case where arsenic can be employed with safety or advantage internally, this preparation is preferable to any other.

C H A P. XXIV.

S Y R U P I.

S Y R U P S.

SYRUPS are saturated solutions of sugar, made in water, or the watery or vinous infusions, or in juices. They were formerly considered as medicines of much greater importance than they are thought to be at present. Syrups and distilled waters were for some ages used as the greatest alteratives; inasmuch that the evacuation of any peccant humour was never attempted, till by a due course of these it had first been supposed to be regularly prepared for expulsion. Hence arose the exuberant collection of both, which we meet with in pharmacopœias. As multitudes of distilled waters have been compounded from materials unfit to give any virtue over the helm; so numbers of syrups have been prepared from ingredients, which in this form cannot be taken in sufficient doses to exert their virtues: for two thirds of a syrup consist of sugar, and greatest part of the remaining third is an aqueous fluid.

Syrups are at present chiefly regarded as convenient vehicles for medicines of greater efficacy; and are used for sweetening draughts and jeleps, for reducing powders into boluses, pills, or electuaries, and other similar purposes. Some likewise may not improperly be considered as medicines themselves; as those of saffron, buckthorn berries, and some others.

To the chapter on syrups the London college, in their pharmacopœia, have premised the following general observations.

In the making of syrups, where we have not directed either the weight of the sugar, or the manner in which it should be dissolved, this is to be the rule :

Take of

Double refined sugar, twenty-nine ounces;

Any kind of liquor, one pint.

Dissolve the sugar in the liquor, in a water bath; then set it aside for twenty-four hours; take off the scum, and pour off the syrup

syrup from the feces, if there be any.

THE following are the general rules which have commonly been given with respect to preparation of syrups.

I.

ALL the rules laid down for making decoctions are likewise to be observed in the decoctions for syrups. Vegetables, both for decoctions and infusions, ought to be dry, unless they are expressly ordered otherwise.

II.

In both the London and Edinburgh pharmacopœias, only the purest or double-refined sugar is allowed.

In the syrups prepared by boiling, it has been customary to perform the clarification with whites of eggs after the sugar had been dissolved in the decoction of the vegetable. This method is apparently injurious to the preparation; since not only the impurities of the sugar are thus discharged, but a considerable part likewise of the medicinal matter, which the water had before taken up from the ingredients, is separated along with them. Nor indeed is the clarification and decomposition of the sugar, by itself, very advisable; for its purification by this process is not so perfect as might be expected: after it has undergone this process, the refineries still separate from it a quantity of oily matter, which is disagreeable to weak stomachs. It appears therefore most eligible to employ fine sugar for all the syrups; even the purgative ones (which have been usually made with coarse sugar, as somewhat coinciding with their intention) not excepted; for, as purgative

medicines are in general ungrateful to the stomach, it is certainly improper to employ an addition which increases their offensiveness.

III.

Where the weight of the sugar is not expressed, twenty-nine ounces are to be taken in every pint of liquor. The sugar is to be reduced into powder, and dissolved in the liquor by the heat of a water bath, unless ordered otherwise.

Although in the formula of several of the syrups, a double weight of sugar to that of the liquor is directed, yet less will generally be sufficient. First, therefore, dissolve in the liquor an equal weight of sugar; then gradually add some more in powder, till a little remains undissolved at the bottom, which is to be afterwards incorporated by setting the syrup in a water bath.

The quantity of sugar should be as much as the liquor is capable of keeping dissolved in the cold: if there is more, part of it will separate, and concrete into crystals, or candy; if less, the syrup will be subject to ferment, especially in warm weather, and change into a vinous or four liquor. If in crystallising, only the superfluous sugar be separated, it would be of no inconvenience; but when part of the sugar has candied, the remaining syrup is found to have an under proportion, and is as subject to fermentation as if it had wanted sugar at first.

IV.

Copper vessels, unless they be well tinned, should not be employed in the making of acid syrups, or such as are composed of the juices of fruits.

The confectioners, who are the most dexterous people at these kinds

kinds of preparations, to avoid the expense of frequently new tinning their vessels, rarely use any other than copper ones untinned, in the preparation even of the most acid syrups, as of oranges and lemons. Nevertheless, by taking due care, that their coppers be well scoured and perfectly clean, and that the syrup remain no longer in them than is absolutely necessary, they avoid giving it any ill taste or quality from the metal. This practice, however, is by no means to be recommended to the apothecary.

V.

The syrup, when made, is to be set by till next day; if any saccharine crust appears upon the surface, it is to be taken off.

SYRUPUS ACETI.

*Edinb.**Syrup of Vinegar.*

Take of .

Vinegar, two pounds and an half;

Double refined sugar, three pounds and an half.

Boil them till a syrup be formed.

THIS is to be considered as simple syrup merely acidulated, and is by no means unpleasant. It is often employed in mucilaginous mixtures, and the like; and on account of its cheapness it is often preferred to syrup of lemons.

SYRUPUS ALTHÆÆ.

*Lond.**Syrup of Marshmallows.*

Take of

Fresh root of marshmallow, bruised, one pound;

Double-refined sugar, four pounds;

Distilled water, one gallon.

Boil the water with the marshmallow root to one half, and press out the liquor when cold. Set it by twelve hours; and, after the feces have subsided, pour off the liquor. Add the sugar, and boil it to the weight of six pounds.

Edin.

Take of

Fresh marshmallow roots, one pound;

Water, ten pounds;

Double-refined sugar, four pounds.

Boil the water with the roots to the consumption of one half, and strain the liquor, strongly expressing it. Suffer the strained liquor to rest till the feces have subsided; and when it is free from the dregs, add the sugar; then boil so as to make a syrup.

THE syrup of marshmallow seems to have been a sort of favorite among dispensatory writers, who have taken great pains to alter and amend it, but have been wonderfully tender in retrenching any of its articles. In these prescriptions it is lopt of its superfluities, without any injury to its virtues. It is chiefly used in nephritic cases, for sweetening emollient decoctions, and the like.

SYRUPUS CARYOPHYLLI RUBRI.

*Lond.**Syrup of Clove July flower.*

Take of

Fresh clove July flowers, the heels being cut off, two pounds;

Boiling distilled water, six pints.

Macerate

Macerate the flowers for twelve hours in a glass vessel; and, in the strained liquor, dissolve the double refined sugar, that it may be made a syrup.

SYRUPUS CARYOPHYLLORUM RUBRORUM.

Edin.

Syrup of Clove July-flowers.

Take of

Clove July-flowers, fresh gathered and freed from the heels, one pound;

Double-refined sugar, seven pounds and a quarter;

Boiling water, four pounds.

Macerate the flowers in the water for a night; then to the strained liquor add the sugar previously powdered, and dissolve it by a gentle heat, to make the whole into a syrup.

This syrup is of an agreeable flavour, and a fine red colour; and for these it is chiefly valued. Some have substituted for it one easily preparable at seasons when flowers are not to be procured: an ounce of clove spice is infused for some days in twelve ounces of white wine, the liquor strained, and, with the addition of twenty ounces of sugar, is boiled to a proper consistence; a little cochineal renders the colour of this syrup exactly similar to that prepared from the clove July-flower; and its flavour is of the same kind, though not so pleasant. The abuse may be readily detected by adding to a little of the syrup some alkaline salt or ley; which will change the genuine syrup to a green colour; but in the counterfeits, it will make no such alte-

ration, only varying the shade of the red.

As the beauty of the colour is a principal quality in this syrup, no force in the way of expression should be used in separating the liquor from the flowers.

SYRUPUS COLCHICI.

Edin.

Syrup of Colchicum.

Take of

Colchicum root, fresh and succulent, cut into small pieces, one ounce;

Vinegar, sixteen ounces;

Double-refined sugar, twenty-six ounces.

Macerate the root in the vinegar two days, now and then shaking the vessel; then strain it with a gentle pressure. To the strained liquor add the sugar, and boil a little, so as to form a syrup.

This syrup seems to be the best preparation of the colchicum: great care is required to take up the root in the proper season: and from errors of this kind we are to ascribe the uncertainty in the effects of this medicine as found in the shops.

The syrup of colchicum is often successfully employed as a diuretic, and may be taken in doses of from a drachm or two to the extent of an ounce or more.

Y-

SYRUPUS CORTICIS AURANTII.

 Lond. *Syrup of Orange-peel.*

Take of

Fresh outer-rind of Seville oranges, eight ounces;
Boiling distilled water, five pints.

Macerate for twelve hours in a close vessel; and, in the strained liquor, dissolve double-refined sugar to make a syrup.

 Edin.

Take of

Fresh outer rind of Seville orange-peel, six ounces;

Boiling water, three pounds.

Infuse them for a night in a close vessel; then strain the liquor; let it stand to settle; and having poured it off clear from the sediment, dissolve in it four pounds and a quarter of double refined powdered sugar, so as to make it into a syrup with a gentle heat.

In making this syrup, it is particularly necessary that the sugar be previously powdered, and dissolved in the infusion with as gentle a heat as possible, to prevent the exhalation of the volatile parts of the peel. With these cautions, the syrup proves a very elegant and agreeable one, possessing great share of the fine flavour of the orange peel.

SYRUPUS CROCI.

 Lond. *Syrup of Saffron.*

Take of

Saffron, one ounce;

Boiling distilled water, one pint.

Macerate the saffron, in the water, for twelve hours, in a close vessel; and dissolve double-refined sugar in the strained liquor, that it may be made a syrup.

SAFFRON is very well fitted for making a syrup, as in this form a sufficient dose of it is contained in a reasonable compass. This syrup is at present frequently prescribed; it is a pleasant cordial, and gives a fine colour to juleps.

SYRUPUS LIMONIS SUCCI.

 Lond. *Syrup of Lemon-juice.*

Take of

Lemon-juice, strained after the fecæ have subsided, two pints;

Double-refined sugar, fifty ounces.

Dissolve the sugar, that it may be made a syrup.

SYRUPUS SUCCI LIMONIS.

 Edin. *Syrup of Lemon juice.*

Take of

Juice of lemons, suffered to stand till the feces have subsided, and afterwards strained, three parts.

Double-refined-sugar, five parts.
Dissolve the sugar in the juice, so as to make a syrup.

SYRUPUS SUCCI FRUCTUS MORI.

 Lond. *Syrup of Mulberry juice.*

SY-

SYRUPUS SUCCI FRUCTUS
RUBI IDÆI.*Lond.**Syrup of Raspberry-juice.*SYRUPUS SUCCI FRUCTUS
RIBIS NIGRI.*Lond.**Syrup of Black Currants.*

These three are directed by the London college to be prepared in the same manner as syrup of lemons.

ALL these are very pleasant cooling syrups; and with this intention they are occasionally used in draughts and juleps, for quenching thirst, abating heat, &c. in bilious or inflammatory distempers. They are sometimes likewise employed in gargarisms for inflammations of the mouth and tonsils.

SYRUPUS PAPAVERIS.

*ALBI.**Lond.**Syrup of the White Poppy.*

Take of

The heads of white poppies, dried, three pounds and an half;

Double refined sugar, six pounds.

Distilled water, eight gallons.

Slice and bruise the heads, then boil them in the water, to three gallons, in a water-bath fatu-rated with sea-salt, and press out the liquor. Reduce this by boiling to about four pints, and strain it while hot, first through a sieve, then through a thin woollen cloth, and set it aside for twelve hours, that the feces may subside. Boil the liquor, poured off from the fe-

ces, to three pints, and dissolve the sugar in it that it may be made a syrup.

SYRUPUS PAPAVERIS AL-
BI, vulgo SYRUPUS DIA-
CODION.*Edin.*

Syrup of white Poppies, commonly called Diacodium.

Take of

White poppy heads, dried, and freed from the seeds, two pounds;

Boiling water, thirty pounds;

Double-refined sugar, four pounds.

Macerate the bruised heads in the water for a night; next boil till only one-third part of the liquor remain; then strain it by expressing it strongly. Boil the strained liquor to the consumption of one half, and strain again; lastly, add the sugar, and boil to a syrup.

THIS syrup, impregnated with the opiate matter of the poppy heads, is given to children in doses of two or three diachms; to adults from half an ounce to an ounce and upwards, for easing pain, procuring rest, and answering the other intentions of mild opiates. Particular care is requisite in its preparation, that it may be always made, as nearly as possible, of the same strength; and accordingly the colleges have been very minute in their description of the process.

SY-

SYRUPUS PAPAVERIS ER-
RATICI.

Lond.
Syrup of the Red Poppy.

Take of

The fresh flowers of red poppy,
four pounds;

Boiling distilled water, four
pints and an half.

Put the flowers, by degrees, into
the boiling water, in a water-
bath, constantly stirring them.
After this, the vessel being ta-
ken out of the bath, macerate
for twelve hours: then press out
the liquor, and set it apart, that
the feces may subside. Lastly,
make it into a syrup, with dou-
ble refined sugar.

THE design of putting the flow-
ers into boiling water in a water-
bath is, that they may be a little
scalded, so as to shrink enough to
be all immersed in the water;
without this artifice, they can
scarcely be all got in: but they
are to be no longer continued over
the fire than till this effect is pro-
duced, lest the liquor become
too thick, and the syrup rendered
ropy.

This syrup has been recom-
mended in disorders of the breast,
coughs, spitting of blood, pleuri-
sies, and other diseases, both as an
emollient and as an opiate. It is
one of the lightest of the opiate
medicines; and in this respect so
weak, that some have doubted of
its having any anodyne quality.
It might indeed be very safely su-
perseded altogether; and accord-
ingly it has now no place either
in the Edinburgh pharmacopœia,
or some of the best foreign ones,
though still retained by the Lon-
don college.

SYRUPUS ROSE.

Lond.
Rose Syrup.

Take of

The dried leaves of the damask
rose, seven ounces;

Double-refined sugar, six pounds;
Boiling distilled water, four
pints.

Macerate the rose leaves in water
for twelve hours, and strain.
Evaporate the strained liquor
to two pints and an half, and
add the sugar, that it may be
made a syrup.

SYRUPUS ROSARUM
PALLIDARUM.

Edin.

Syrup of pale Roses.

Take of

Pale roses, fresh gathered, one
pound;

Boiling water, four pounds;

Double-refined sugar, three
pounds.

Macerate the roses in the water for
a night; then to the liquor
strained, and freed from the
dregs, add the sugar; and boil
them into a syrup.

This syrup may likewise be made
from the liquor remaining after
the distillation of rose water,
depurated from its feces.

THE liquor remaining after the
distillation of roses (provided the
still has been perfectly clean) is
as proper for making this syrup as
a fresh infusion; for the distilla-
tion only collects those volatile
parts which are dissipated in the
air while the infusion is boiling to
its consistence. This syrup is an
agreeable and mild purgative for
children, in the dose of half a
spoonful, or a spoonful. It like-
wife

wife proves gently laxative to adults; and with this intention may be of service in colic habits. Its principal use is in solutive glysters.

SYRUPUS ROSARUM RUBRARUM.

Edin.

Syrup of red Roses.

Take of

Red roses, dried, seven ounces;

Double refined sugar, six pounds;

Boiling water, five pounds.

Infuse the roses in the water for a night, then boil them a little; strain out the liquor, and adding to it the sugar, boil them to the consistence of a syrup.

This syrup is supposed to be mildly astringent: but is principally valued on account of its red colour. The London college have omitted it, having retained others at least equal to it in that respect.

SYRUPUS SCILLITICUS.

Edin.

Syrup of Squills.

Take of

Vinegar of squills, two pounds;

Double-refined sugar, three pounds and a half.

Make them into a syrup with a gentle heat.

This syrup was formerly prepared with some spices, intended to alleviate the offensiveness of the squills; but while they had not this effect, they often counteracted the intention in view, and are therefore omitted. It is used chiefly in doses of a spoonful or two, for promoting expectoration, which it does very powerfully.

3 T

SYRUPUS SIMPLEX, five COMMUNIS.

Edin.

Simple or common Syrup.

Take of

Double-refined sugar, fifteen parts;

Water, eight parts.

Let the sugar be dissolved by a gentle heat.

This preparation is a plain liquid sweet, void of flavour or colour; and is more convenient in extemporaneous prescription than sugar undissolved.

SYRUPUS SPINÆ CERVINÆ.

Lond.

Syrup of Buck-thorn.

Take of

The juice of ripe and fresh buck-thorn berries, one gallon;

Ginger, bruised, one ounce;

Pimento, powdered, one ounce and a half;

Double-refined sugar, seven pounds.

Set by the juice for some days, that the feces may subside, and strain. Macerate the ginger and pimento in a pint of the strained juice, for four hours, and strain. Boil away the rest of the juice to three pints; then add that part of the juice in which the ginger and pimento have been macerated; and, lastly, the sugar, that it may be made a syrup.

SYRUPUS RHAMNI CATHARTICI, vulgo e SPINÆ CERVINÆ.

Edin.

Syrup of Buck-thorn.

Take of

The juice of ripe buck-thorn berries,

ries, depurated, seven pounds and a half;

Double-refined sugar, three pounds and a half;

Boil them to the consistence of a syrup.

BOTH these preparations, in doses of three or four spoonfuls, operate as brisk cathartics. The principal inconveniences attending them are, their being very unpleasant, and their occasioning a thirst and dryness of the mouth and fauces, and sometimes violent gripes: these effects may be prevented by drinking freely of water-gruel, or other warm liquids, during the operation. The ungratefulness of the buckthorn is endeavoured to be remedied in the first of the above prescriptions, by the addition of aromatics. which, however, are scarcely sufficient for that purpose.

SYRUPUS TOLUTANUS.

Lond.

Syrup of Tolu.

Take of

The balsam of Tolu, eight ounces;

Distilled water, three pints.

Boil for two hours. Mix with the liquor, strained after it is cold, the double refined sugar, that it may be made a syrup.

SYRUPUS TOLUTANUS,
vulgo SYRUPUS EALSAMICUS.

Edin.

Syrup of Tolu, commonly called
Balsamic Syrup.

Take of

Simple syrup, just made, and warm from the fire, two pounds;

Tincture of Tolu, one ounce.

When the syrup has grown almost cold, stir into it the tincture, by little at a time, agitating them well together, till perfectly united.

THIS last method of making the balsamic syrup was dropt in one of the preceding editions of the Edinburgh pharmacopœia, on a complaint that the spirit spoiled the taste of the syrup; which it did in a great degree when the tincture was drawn with malt-spirits, the nauseous oil, which accompanies all the common malt-spirits, communicating that quality; and this was particularly the case when the spirituous part was evaporated from the syrup, as was directed in the former edition of the Edinburgh pharmacopœia. Particular care therefore should be taken, that the spirit, employed for making the tincture, be perfectly clean, and well rectified from all ill flavour.

The intention of the contrivers of the two foregoing processes seems to have been somewhat different. In the first, the more subtle and fragrant parts of the balsam are extracted from the grosser resinous matter, and alone retained in the syrup: the other syrup contains the whole substance of the balsam in larger quantity.

In some pharmacopœias, a syrup of this kind is prepared from a tincture of balsam of Peru, with rose-water, and a proper quantity of sugar.

SYRUPUS VIOLÆ.

*Lond.**Syrup of Violets.*

Take of

The fresh petals of the violet,
two pounds;

Boiling distilled water, five pints.

Macerate for twenty four hours;

afterwards strain the liquor,

without pressing, through thin

linen. Add double refined su-

gar, that it may be made a syrup.

SYRUPUS VIOLARUM.

*Edin.**Syrup of Violets.*

Take of

Fresh violets, one pound;

Boiling water, four pounds;

Double-refined sugar, seven

pounds and a half.

Macerate the violets in the water

for twenty-four hours in a glass

or a glazed earthen vessel, close

covered; then strain without

expression, and to the strained

liquor add the sugar, powdered,

and make into a syrup.

THIS syrup is of a very agreeable flavour; and in the quantity of a spoonful or two proves to children gently laxative. It is apt to lose, in keeping, the elegant blue colour, for which it is chiefly valued; and hence some have been induced to counterfeit it with materials whose colour is more permanent. This abuse may be readily discovered, by adding to a little of the suspected syrup any acid or alkaline liquor. If the syrup be genuine, the acid will change it red, and the alkali green; but if counterfeit, these changes will not happen. It is obvious, from this mutability of the colour of the violet, that the prescriber

would be deceived if he should expect to give any blue tinge to acidulated or alkalised juleps or mixtures, by the addition of the blue syrup.

SYRUPUS ZINGIBERIS.

*Lond.**Syrup of Ginger.*

Take of

Ginger, bruised, four ounces;

Boiling distilled water, three
pints.

Macerate for four hours, and strain; then add double refined

sugar, and make into a syrup.

Edin.

Take of

Powdered ginger, three ounces;

Boiling water, four pounds;

Double-refined sugar, seven
pounds and a half.

Macerate the ginger in the water

in a close vessel, for twenty four

hours; then to the liquor strain-

ed, and freed from the feces,

add the powdered sugar, and

make them into a syrup.

THESE are agreeable and moderately aromatic syrups, impregnated with the flavour and virtues of the ginger.

SYRUPUS ACIDUS.

*Gen.**Acid Syrup.*

Take of

Weak spirit of vitriol, two
drachms;

Syrup of lemons, six ounces.

Mix them.

WHERE we wish to obtain a syrup, not only strongly acidulated, but also powerfully astringent, this

formula may be considered as well suited to answer the purpose.

SYRUPUS ALKALINUS.

Gen.
Alkaline Syrup.

Take of

Salt of tartar, three drachms ;
Simple syrup, six ounces.
Mix them.

In this syrup we have in some degree the converse of the preceding ; and it may be usefully employed, either for the destruction of acid in the stomach, or for the formation of neutral or effervescent mixtures.

SYRUPUS ALLII.

Succ.
Syrup of Garlic.

Take of

The fresh root of garlic, sliced, one pound ;

Boiling water, two pounds.

Macerate them in a close vessel for an hour ; add to the strained liquor,

Refined sugar, two pounds.

Boil them to a syrup.

This syrup formerly held a place in our pharmacopœias, and was recommended for promoting expectoration, in cases of chronic catarrh, and other affections of the breast : But as well as the *oxymel ex allio*, it is now banished from them : and there can be little doubt that the same intentions may in general be answered by less disagreeable medicines. Yet where we wish to employ garlic in a watery menstruum, this formula is perhaps one of the best under which it can be exhibited.

Take of

Sweet almonds, one pound ;
Bitter almonds, two drachms.

Let the almonds be blanched and beat in a stone mortar, with a wooden pestle ; then by degrees add barley water, two pounds ; strain the liquor, and form it into a syrup, with as much double refined sugar as may be necessary.

THE agreeable flavour of the almonds, is in this formula communicated to a syrup, which may be advantageously employed to sweeten mixtures, or to form a pleasant drink when diffused in water ; and the flavour is not a little improved by the addition of the proportion of bitter almonds here directed.

SYRUPUS CINNAMOMI.

Reft.
Syrup of Cinnamon.

Take of

Cinnamon, bruised, five ounces ;
Spirituuous cinnamon water, two pounds.

Digest them in a close glass vessel for twenty-four hours ; then add to the strained liquor double refined sugar, three pounds ; boil it to a syrup.

This syrup is strongly impregnated with the cinnamon ; and where we wish to sweeten any mixture, at the same time adding to it an agreeable aromatic, it is perhaps one of the best articles we can employ.

SYRUPUS EMETICUS.

*Brun.**Emetic Syrup.*

tartarifatum, previously dissolved in a small proportion of water.

SYRUPUS HYDRARGYRI.

*Succ.**Syrup of Quicksilver.*

Take of

Glass of antimony, finely powdered, two drachms;

Rhenish wine, twelve ounces.

Let them be digested for three days in a gentle heat, then strain the liquor through paper, and mix with the strained liquor thirty ounces of double-refined sugar. Let it be formed into a syrup, and kept in a close vessel.

THERE can be no doubt of this syrup being strongly impregnated with the emetic quality of the antimony; and it will at least have so far the advantage of being very agreeable to the taste, that it may be readily taken by children. But every good effect to be obtained from it may be had with more certainty, by adding to simple syrup any quantity that may be thought necessary of the *autimonium*

Take of

Purified quicksilver, one drachm;

Gum arabic, three drachms;

Rose water, as much as sufficient for reducing the gum to a mucus.

Let them be rubbed in a mortar, till the quicksilver totally disappears; then by degrees mix with it simple syrup, four ounces.

IN this we have a preparation similar to the mercurial solution of Dr Plenck, formerly mentioned; and which, while it does not possess any other advantage than mere sweetness of taste, is liable to the objections formerly urged against that preparation.

C H A P.

C H A P. XXV.

M E L L I T A.

MEDICATED HONEYS.

THE more fixed parts of vegetables, dissolved in watery liquors, may be thence transferred into honey, by mixing the honey with the watery decoction or juice of the plant, and boiling them together till the aqueous part has exhaled, and the honey remains of its original consistence. Honey has not probably, however, any very peculiar advantage over sugar; and it is liable to many inconveniences which sugar is free from: in particular, it is much more liable to run into fermentation, and in many constitutions produces gripes and often violent effects: The Edinburgh college have therefore rejected all the oxymels from their last edition of the pharmacopœia. And the number of preparations with honey in most of the foreign pharmacopœias is now greatly diminished. Still, however, several are much employed by practitioners of eminence, and retained in the London pharmacopœia.

MEL ACETATUM.

Lond.

Acetated Honey.

Take of

Clarified honey, two pounds;
Distilled vinegar, one pound by weight.

Boil them in a glass vessel with a gentle fire to the consistency of a syrup.

THIS is the old *oxymel simplex* of former pharmacopœias, and was once in great repute as a cooling and attenuating medicine; it is scarcely used in modern practice, except in colds attended with coughs, and in sore throats, for which, when diluted with some aromatic or astringent infusion, as sage tea, Rose flower tea, &c. it makes useful gargles.

MEL

MEL ROSÆ.

*Lond.**Honey of Roses.*

Clarified honey, fourteen ounces.

Dissolve the verdegriis in the vinegar, and strain it through linen; then add the honey, and boil the whole to a proper thickness.

Take of

Dried red-rose buds, four ounces;

Boiling distilled water, three pints;

Clarified honey, five pounds.

Macerate the rose leaves in the water for six hours; then mix the honey with the strained liquor, and boil the mixture to the thickness of a syrup.

THIS preparation is not frequently used as a mild cooling detergent, particularly in gargisms for ulcerations and inflammation of the mouth and tonsils. The rose-buds here used should be hastily dried; the design of doing so is, that they may the better preserve their astringency.

MEL SCILLÆ.

*Lond.**Honey of Squills.*

OXYMEL COLCHICI.

*Lond.**Oxymel of Meadow Saffron.*

Take of

Clarified honey, three pounds;

Tincture of squills, two pints.

Boil them in a glass vessel to the thickness of a syrup.

THIS honey will here be impregnated with all the active parts of the squills which the tincture before contained, and may be employed as an useful expectorant or diuretic.

OXYMEL ÆRUGINIS.

*Lond.**Oxymel of Verdegriis.*

Take of

Prepared verdegriis, one ounce;
Vinegar, seven ounces;

THIS is an improvement of what was formerly known in our pharmacopœias under the title of *Mel Egyptiacum*; which, however, was, as then prepared, very uncertain with respect to strength. It is used only externally for cleansing foul ulcers, and keeping down fungous flesh. It is also often serviceable in venereal ulcerations of the mouth and tonsils; But there is some danger from its application to places from the situation of which it is apt to be swallowed; for even a small quantity of verdegriis passing into the stomach may be productive of distressing, if not deleterious, effects.

Take of

The fresh root of meadow-saffron, cut into thin slices, one ounce;

Distilled vinegar, one pint;

Clarified honey, two pounds.

Macerate the root of meadow-saffron, with the vinegar, in a glass vessel, with a gentle heat, for forty-eight hours. Strain the liquor, pressed out strongly from the root, and add the honey. Lastly, boil the mixture, frequently stirring it with a wooden spoon, to the thickness of a syrup.

THIS oxymel may be considered as very analogous to the *syrupus colchici*

colchici of which we have already made some observations. Under this form it was first introduced by Dr Stoerk: and although with certain constitutions the syrup is unquestionably preferable, yet it well deserves a place in our pharmacopœias, as being an active medicine.

OXYMEL SCILLÆ.

Lond.

Oxymel of Squills.

Take of

Clarified honey, three pounds;

Vinegar of squills, two pints.

Boil them in a glass vessel, with a slow fire, to the thickness of a syrup.

THE honey was formerly employed for this preparation unclarified, and the scum, which in such cases arises in the boiling, taken off; by this means the impurities of the squills, with which the vinegar was impregnated, were also separated. For this reason the college of London have now judiciously ordered the honey for all these kinds of preparations to be previously clarified by itself.

Oxymel of squills is an useful aperient, detergent, and expectorant, and of great service in asthma, coughs, and other disorders

where thick phlegm abounds. It is given in doses of two or three drachms, along with some aromatic water, as that of cinnamon, to prevent the great nausea which it would otherwise be apt to excite. In large doses, it proves emetic.

OXYMEL ex ALLIO.

Dan.

Oxymel of Garlic.

Take of

Garlic, cut in slices, an ounce and a half;

Caraway seeds,

Sweet fennel seeds, each two drachms;

Clarified honey, ten ounces;

Vinegar, half a pint.

Boil the vinegar for a little time, with the seeds bruised, in a glazed earthen vessel; then add the garlic, and cover the vessel close; when grown cold, press out the liquor, and dissolve in it the honey by the heat of a water-bath.

THIS oxymel is recommended for promoting expectoration, and the fluid secretions in general. It is doubtless a medicine of considerable efficacy, though very unpleasant, the flavour of the garlic prevailing, notwithstanding the addition of the aromatic seeds.

C H A P. XXVI.

P U L V E R E S.

P O W D E R S.

THIS form receives such materials only as are capable of being sufficiently dried to become pulverifiable, without the loss of their virtue. There are many substances, however, of this kind, which cannot be conveniently taken in powder; bitter, acrid, fetid drugs are too disagreable; emollient and mucilaginous herbs and roots are too bulky; pure gums cohere, and become tenacious in the mouth; fixt alkaline salts liquefy on exposition to the air; and volatile alkalies exhale. Many of the aromatics, too, suffer a great loss of their odorous principle when kept in powder; as in that form they expose a much larger surface to the air.

The dose of powders, in extemporaneous prescription, is generally about half a drachm: it rarely exceeds a whole drachm; and is not often less than a scruple. Substances which produce powerful effects in smaller doses are not trusted to this form, unless their bulk be increased by additions of less efficacy; those which require to be given in larger ones are better fitted for other forms.

The usual vehicle for taking the lighter powders, is any agreeable thin liquid. The ponderous powders, particularly those prepared from metallic substances, require a more consistent vehicle, as syrups; for from thin ones they soon subside; resinous substances likewise are most commodiously taken in thick liquors; in thin ones, they are apt to run into lumps, which are not easily again soluble.

General Rules for making Powders.

I.

Particular care ought to be taken that nothing corrupted, decayed, or impure, be mixed in the composition of powders: the stalks and corrupted parts of plants are to be separated.

II.

The dry aromatics ought to be sprinkled, during their pulverisation, with a few drops of water.

III.

The moister aromatics may be dried with a very gentle heat, before they

they are committed to the mortar.

IV.

Gums, and such other substances as are difficultly pulverisable, should be pounded along with drier ones, that they may pass the sieve together.

V.

No part should be separated for use, until the whole quantity put into the mortar has passed the sieve, and the several siftings mixed together; for those parts of the subject, which are first powdered, are different, in their degree of efficacy, from the rest.

VI.

Powders of aromatics are to be prepared only in small quantities at a time, and kept in glass vessels very closely stoppt.

If powders are long kept, and not carefully secured from the air, their virtue is in a great measure destroyed, although the parts in which it consists should not in other circumstances prove volatile. Thus, though the virtues of *ipeacacuanha* are so fixt as to remain entire even in extractions made with proper menstrua, yet if the powdered root be long exposed to the air, it loses its emetic quality.

PULVIS ALOES CUM CANELLA.

Lond.

Powder of aloes with Cinnamon.

Take of

Socotorine aloes, one pound;
White cinnamon, three ounces.
Powder them separately, and then mix them.

This composition has long been

known in the shops under the title of *Hiera picra*. It furnishes us with an useful aloetic purgative, the canella operating as a good corrigent for the aloes. But it is more frequently employed as the basis of electuaries, or pills, or of a tincture, which was for a long time distinguished by the appellation of *Sacred tincture*.

PULVIS ALOES CUM FERRO.

RO.

Lond.

Powder of aloes with Iron.

Take of

Socotorine aloes, powdered, an ounce and a half;

Myrrh, powdered, two ounces;

Dry extract of gentian,

Vitriolated iron, of each, in powder, one ounce.

Mix them.

In this powder we have an aloetic and chalybeate conjoined. It consists of nearly the same articles which formerly entered the composition of the *Pilule cephalicæ chalybeatæ*, as they were called; and it is perhaps more frequently employed when brought to the form of pills by means of syrups, than in powder: But in either way it is an useful medicine, and is particularly employed with advantage in cases of obstructed menstruation.

PULVIS ALOES CUM GUAIACO.

Lond.

Powder of aloes with Guaiacum.

Take of

Socotorine aloes, one ounce and an half;

Gum guaiacum, one ounce;

Aromatic powder, half an ounce.
Powder

Powder the aloes and gum guaiacum separately; then mix all the ingredients together.

In the guaiacum, as well as the aloes, we have a warm gummy-resinous purgative; and both are corrected, as well as more minutely divided, from their combination with the aromatics. This therefore furnishes us with an useful purgative: But when taken only in small doses, its chief effect is that of promoting perspiration. It is, however, more frequently employed in the form of pills than in the state of powder; and indeed it consists of nearly the same ingredients which constituted the *Pilule aromaticæ*, of the former edition of the London pharmacopœia.

PULVIS AROMATICUS.

Lond.

Aromatic Powder.

Take of

Cinnamon, two ounces;

Smaller cardamom seeds,

Ginger,

Long pepper, of each one ounce.

Powder them together.

PULVIS AROMATICUS, vulgaris SPECIES AROMATICÆ.

CÆ.

Edinb.

Aromatic powder, commonly called *Aromatic Species*.

Take of

Cinnamon,

Lesser cardamom seeds,

Ginger, of each two ounces.

Reduce them together into a powder, to be kept in a well stoppered phial.

Both these compositions are a-

greeable, hot, spicy medicines; and as such may be usefully taken in cold phlegmatic habits and decayed constitutions, for warming the stomach, promoting digestion, and strengthening the tone of the viscera. The dose is from ten grains to a scruple and upwards.

PULVIS ASARI COMPOSITUS.

Lond.

Compound powder of Asarabacca.

Take of

Dried leaves of asarabacca, sweet marjoram, Syrian herb matich,

Dried flowers of lavender, of each one ounce.

Powder them together.

PULVIS ASARI COMPOSITUS, vulgo PULVIS STERNUTATORIUS.

Edin.

Compound powder of asarabacca, commonly called *Sternutatory*.

Take of

The leaves of asarum, three parts;

Marjoram,

Lavender flowers, of each one part.

Powder them together.

THOUGH the former of these powders be more compound than the latter, yet they differ very little. They are both agreeable and efficacious errhines, and superior to most of those usually sold under the name of *herb snuff*. They are often employed with great advantage in cases of obstinate headache, and of ophthalmias resisting other modes of cure. Taken undet

der the form of snuff to the extent of five or six grains at bed-time, they will operate the succeeding day as a powerful erethic, inducing frequent sneezing, and a large discharge from the nose. It is, however, necessary, during their operation, to avoid exposure to cold.

PULVIS CERUSSÆ COMPOSITUS.

Lond.

Compound Powder of Cerusse.

Take of

Cerusse, five ounces ;

Sarcocoll, an ounce and an half ;
Tragacanth, half an ounce.

Powder them together.

This composition is the *Trochisci albi* of Rhazes brought back to its original simplicity with regard to the ingredients, and without the needless trouble of making it into troches. It is employed for external purposes, as in collyria, lotions, and injections for repelling acrimonious humours ; and in inflammations.

PULVIS CHELARUM CANCRI COMPOSITUS.

Lond.

Compound Powder of Crabs claws.

Take of

Crabs claws, prepared, one pound ;

Chalk,

Red coral, each, prepared, three ounces.

Mix them.

This powder has lost several of its ingredients, without any injury to its virtues ; and possibly it would still bear a farther reduction ; for the crabs eyes and

chalk are by themselves at least as effectual as any composition of them with coral.

PULVIS CONTRAYERVÆ COMPOSITUS.

Lond.

Compound Powder of Contrayerva.

Take of

Contrayerva, powdered, five ounces ;

Compound powder of crabs claws, one pound and an half.

Mix them.

This powder was formerly directed to be made up into balls with water, and was then called *Lapis contrayervæ* ; a piece of trouble now laid aside as needless, for it was necessary to reduce the balls into powder again before they could be used. Nor did that form contribute, as has been imagined, to their preservation ; for it is scarcely to be supposed that the powder will lose more by being kept for a reasonable length of time in a close stopp'd glass, than the balls will from humectation with water, and exsiccation in the air, before they are fit for being put by to keep. This medicine has a very good claim to the title of an alexipharmac and sudorific. The contrayerva by itself proves very serviceable in low fevers, where the vis vitæ is weak, and a diaphoresis to be promoted. It is possible, that the crabs-claws are of no farther service than as they divide this powerful ingredient, and make it fit more easily on the stomach.

PUL-

PULVIS CRETÆ COMPOSITUS.

 *Lond.**Compound Powder of Chalk.*

Take of

Prepared chalk, half a pound ;
Cinnamon, four ounces ;

Tormentil,

Gum arabic, of each, three ounces ;

Long pepper, half an ounce.

Powder them separately, and mix them.

PULVIS CRETACEUS.

 *Edinb.**Chalk Powder.*

Take of

White chalk prepared, four ounces ;

Nutmeg, half a drachm ;

Cinnamon, one drachm and an half.

Powder them together.

THE addition of the aromatics in the above formulæ, coincides with the general intention of the remedy, which is indicated for weaknefs and acidity in the stomach ; and for loosenefs from acidity.

PULVIS CRETÆ COMPOSITUS CUM OPIO.

 *Lond.**Compound Powder of Chalk with Opium.*

Take of

Compound powder of chalk, eight ounces ;

Hard purified opium, powdered, one drachm and an half.

Mix them.

From the addition of the opium this remedy becomes still more

powerful than the above in restraining diarrhœa.

PULVIS IPECACUANHÆ COMPOSITUS.

 *Lond.**Compound Powder of Ipecacuanha.*

Take of

Ipecacuanha,

Hard purified opium, of each, powdered, one drachm ;

Vitriolated kali, powdered, one ounce.

Mix them.

PULVIS IPECACUANHÆ COMPOSITUS, vulgo PULVIS DOVERI.

 *Edin.**Compound Powder of Ipecacuanha, commonly called Dovers powder.*

Take of

Ipecacuanha,

Purified opium, each one drachm ;

Vitriolated lixivæ, one ounce.

Mix, and grind them accurately together, so as to make an uniform powder.

The vitriolated lixivæ, from the grittiness of its crystals, is perhaps better fitted for tearing and dividing the tenacious opium than any other salt ; this seems to be its only use in the preparation. The operator ought to be careful that the opium and ipecacuanha be equally diffused through the whole mass of powder, otherwise different portions of the powder must have differences in degree of strength. The hard purified opium, directed by the London college, is, from this circumstance, preferable to opium in its ordinary state, employed by the Edinburgh college.

This

This powder is one of the most certain sudorifics, and as such, was recommended by Dr Dover as an effectual remedy in rheumatism. Modern practice confirms its reputation, not only in rheumatism, but also in dropsy and sundry other diseases, where it is often difficult by other means to produce a copious sweat. The dose is from five to ten or twelve grains, according as the patient's stomach and strength can bear it. It is convenient to avoid much drinking immediately after taking it, otherwise it is very apt to be rejected by vomiting before any other effects are produced.

PULVIS JALAPPÆ COMPOSITUS.

Edinb.

Compound Powder of Jalap.

Take of

Jalap root, one ounce;

Crytals of tartar, two ounces.

Mix, and diligently grind them together for some time, so as to form a very fine powder.

THE use of the crytals in this preparation is to break down and divide the jalap into very minute particles, whereby its operation is thought to be meliorated; and on this account the two articles are directed to be pounded together, and not separately. This powder is a useful and active purgative, in every case where it is necessary to produce both a full evacuation of the intestinal canal, and a free discharge from the system in general.

PULVIS MYRRHÆ COMPOSITUS.

Lond.

Compound Powder of Myrrh.

Take of

Myrrh,

Dried favin,

Rue,

Russian castor, of each, an ounce.
Powder them together.

THIS is a reformation of the *Trebijci e myrrha*, a composition contrived by Rhazes against urine obstructions. From a scruple to a drachm of it may be taken in any convenient vehicle, or made into boluses, twice or thrice a day.

PULVIS OPIATUS.

Lond.

Opiate Powder.

Take of

Hard purified opium, powdered,
one drachm;

Burnt and prepared hartshorn,
nine drachms.

Mix them.

THE hartshorn is here intended merely to divide the opium, and to reduce it to the form of powder, which on some occasions is preferable to its being given either in a liquid form or in that of pills. As ten grains of this powder contain precisely one of the opium, the requisite dose may be easily adapted to the circumstances of the case. It is often successfully employed as a sweating powder; and has not, like the Pulvis Doveri, the effect of inducing sickness or vomiting.

PUL-

PULVIS SCAMMONII COM-
POSITUS.

in most cases the Edinburgh formula will be found preferable.

Lond.

Compound Powder of Scammony.

Take of

Scammony,

Hard extract of jalap, of each

two ounces;

Ginger, half an ounce.

Powder them separately, and mix them.

Edin.

Take of

Scammony,

Crystals of tartar, of each two

ounces;

Mix, and grind them diligently into a powder.

Take of

Diaphoretic antimony,

Cream of tartar,

Scammony, each equal parts.

Make them into a powder.

It is much to be regretted, that in the pharmacopœias published by authority in Britain, two compositions should be distinguished by the same name, differing considerably from each other in their nature and degree of activity.

The compound powder of scammony in the former edition of the London pharmacopœias differed considerably from the present: For there, the only addition was calined hartshorn, intended merely for the division of the scammony. This purpose is still better answered by the crystals of tartar, which at the same time conspire with the operation of the scammony as a purgative. But the addition of jalap and ginger, according to the present formula of the London pharmacopœia, gives not only a purgative considerably different, but also increases the heating quality of the medicine, while the cream of tartar has an evident refrigerant power. Both may occasionally be useful, but

This may be given to the quantity of a drachm or more. In other prescriptions, the tartar and antimonial calx bear nearly the same proportion to the scammony as the calcined hartshorn did in the London pharmacopœia. It appears probable, that neither of these ingredients are of any farther use, than as they divide the texture of the scammony: though Cornachini supposes very considerable advantage from some deobstruent quality in the tartar, whereby the vessels shall be opened, and the noxious humours prepared for expulsion; and from the preparation of antimony, though it have no sensible operation, he expects some share of the same success which sometimes attends the rougher preparations of that mineral.

PUL-

PULVIS SCAMMONII COM-
POSITUS CUM ALOE.PULVIS SENNÆ COMPOSI-
TUS.

Lond.

Lond.

*Compound Powder of Scammony
with Aloes.**Compound Powder of Senna.*

Take of

Take of

Scammony, six drachms;

Hard extract of jalap.

Socotorine aloes, of each an ounce
and an half;

Ginger, half an ounce.

Powder them separately, and mix
them.Senna,
Crystals of tartar, of each two
ounces;

Scammony, half an ounce;

Ginger, two drachms.

Powder the scammony by itself,
and the rest together, then mix
them all.

In this formula, the combination of scammony, jalap, and aloes, furnishes a very active purgative, which, with some intentions at least, may be preferable to either of the preceding. From five to ten grains of it operate as a purgative even in cases of obstinate costiveness.

THIS powder is given as a cathartic, in the dose of two scruples, or a drachm. The spice is added, not only to divide, but to warm the medicine, and make it fit easier on the stomach. The scammony is used as a stimulus to the fenna; the quantity of the latter necessary for a dose, when not assisted by some more powerful material, being too bulky to be conveniently taken in this form.

PULVIS SCAMMONII CUM
CALOMELANE.

Lond.

Powder of Scammony with Calomel.

Take of

Scammony, half an ounce;

Calomel,

Double refined sugar, of each
two drachms.Powder them separately, and then
mix them.

In this formula, we have the scammony in a more simple state, united with such a proportion of calomel as must very considerably aid its purgative power; and accordingly it may be employed with advantage, both in cases of obstinate costiveness, and in dropical affections, where a considerable discharge is required from the system.

PULVIS ALUMINIS COM-
POSITUS, vulgo PULVIS
STYPTICUS.

Edinb.

*Compound Powder of Alum, com-
monly called Styptic Powder.*

Take of

Alum, an ounce and a half;

Gum kino, three drachms.

Powder them together.

IN former editions of our pharmacopœia, a powder of this kind was directed to be made with alum and dragon's blood, and was long in repute as an astringent, under the title of *Pulvis Stypticus Helvetii*. The gum kino is judiciously substituted for the dragon's blood, as being a much more powerful and certain astringent. The chief use

of

of this powder is in hæmorrhagies, especially of the uterus.

PULVIS TRAGACANTHÆ COMPOSITUS.

Lond.

Compound Powder of Tragacanth.

Take of

Tragacanth, powdered,

Gum Arabic,

Starch, of each an ounce and a half;

Double refined sugar, three ounces.

Powder them together.

THIS composition is somewhat simplified by the rejection of the marsh-mallow, and liquorice root, which formerly entered it: But this has not probably produced any diminution of its medical properties. It operates as a mild emollient; and hence becomes serviceable in hectic cases, tickling coughs, strangury, some kinds of alvine fluxes, and other disorders proceeding from acrimony in the intestines. The dose is from half a drachm to two or three drachms, which may be frequently repeated.

PULVIS ANTHELMINTICUS.

Gen.

Anthelmintic Powder.

Take of

Worm-seed,

Flowers of tansy, each three drachms;

Sai martis, one drachm.

Mix them.

BOTH the tansy and worm seed possess a considerable degree of anthelmintic power, which is not a little increased by the salt of steel. And from this combination

more effect in the expulsion of worms, particularly of the lumbrici, may be expected, than from any of the articles taken by themselves. This powder may be given to the extent of half a drachm or upwards for a dose, proportioned to the age and circumstances of the patient.

PULVIS DIGESTIVUS.

Sicc.

Digestive Powder.

Take of

Bitter purging salts,

Rhubarb, each equal parts.

Mix them.

IN this composition, the salt will brisken the operation of the rhubarb as a cathartic, and the astringency of the latter will tend to increase the tone of the stomach: hence, in consequence of evacuating, and at the same time strengthening the alimentary canal, it may be presumed to have considerable influence in promoting digestion.

PULVIS DYSENTERICUS.

Dan.

Dysenteric Powder.

Take of

Rhubarb, one ounce;

Calcined hartshorn, half an ounce;

Gum arabic, three drachms;

Cascarilla bark, two drachms.

Mix them, and reduce them to a very fine powder.

Here the rhubarb is combined with another powerful tonic, the cascarilla; and while the calcined hartshorn serves to neutralise acid, the gum arabic will operate as a demulcent. This composition therefore may

be very useful in dysenteric cases, after the violence of the disease has been overcome, and when there remains a debilitated and abraded state of the intestinal canal.

to check looseness very suddenly. It is particularly useful with infants, and hence the origin of the name here affixed to it.

PULVIS NITROSUS.

Succ.

Nitrous Powder.

Take of

Purified nitre, three ounces;
Salt of sorrel, one ounce;
Double refined sugar, ten ounces.

Let them be mixed.

This is a very convenient and agreeable form of exhibiting nitre: for while the sugar serves not only to divide and diffuse it, but also to correct its taste, the salt of sorrel adds to its refrigerant power.

PULVIS FUMALIS.

Res.

Fumigation Powder.

Take of

Olibanum,
Amber,
Mastic, each three parts;
Storax, two parts;
Benzoin,
Labdanum, each one part.
Mix them into a gross powder.

This powder is intended for the purpose of fumigation; and when burnt it gives out a fragrant odour: hence it may be successfully employed for combating disagreeable smells, and counteracting putrid or other noxious vapours diffused in the atmosphere.

PULVIS INFANTUM.

Succ.

Powder for Infants.

Take of

Magnesia alba, one ounce;
Rhubarb, reduced to a very fine powder, one drachm.
Let them be mixed.

This powder is very useful for destroying acid, and at the same time restoring the diminished tone of the alimentary canal: hence it is often advantageously employed in cases of diarrhoea, which depend on these morbid conditions; and it is in general a circumstance of considerable advantage, that it does not tend

Take of

Opium, half a scruple;
Purified nitre, five scruples and a half;
Refined sugar, one ounce.
Mix them together into a powder.

In this powder those inconveniences which sometimes result from opium are corrected, in consequence of the refrigerant power of nitre; and hence it may prove a very useful sedative powder. The sugar is intended merely to give form to the medicine. Each drachm of it, contains a grain of opium; so that a prædicationer has it in his power easily to regulate the dose according to circumstances.

CHAP.

C H A P. XXVII.

T R O C H I S C I.

T R O C H E S.

TRUCHES and lozenges are composed of powders made up with glutinous substances into little cakes, and afterwards dried. This form is principally used for the more commodious exhibition of certain medicines, by fitting them to dissolve slowly in the mouth, so as to pass by degrees into the stomach; and hence these preparations have generally a considerable proportion of sugar or other materials grateful to the palate. Some powders have likewise been reduced into troches, with a view to their preparation; though possibly for no very good reasons: for the moistening, and afterwards drying them in the air, must on this account be of greater injury, than any advantage accruing from this form can counterbalance.

observed in the powders for troches.

II. If the mass proves so glutinous as to stick to the fingers in making up, the hands may be anointed with any convenient sweet or aromatic oil; or else sprinkled with powder of starch, or of liquorice, or with flour.

III.

In order to thoroughly dry the troches, put them on an inverted sieve, in a shady airy place, and frequently turn them.

IV.

Troches are to be kept in glass vessels, or in earthen ones well glazed.

TROCHISCI AMYLL.

Lond.

Troches of Starch.

*General Rules for making
TROCHES.*

Take of

Starch, an ounce and an half;
Liquorice, six drachms;
Florentine orris, half an ounce;
Double-refined sugar, one pound
and a half.

Powder

I. The three first rules laid down for making powders, are also to be

Powder them, and by means of mucilage of gum tragacanth, make troches.

They may be made, if so chosen, without the orris.

TROCHISCI ARABICI, vulgo TROCHISCI BECHICI ALBI.

Edinb.

Arabic Troches, commonly called *White pectoral Troches*.

Take of

Double-refined sugar, one pound;

Gum Arabic, four ounces;

Starch, one ounce.

Powder them, and make them into a proper mass with rose-water, so as to form troches.

THESE compositions are very agreeable pectorals, and may be used at pleasure. They are calculated for allaying the tickling in the throat which provokes coughing.

Although the composition in the London and Edinburgh pharmacopœias be somewhat different, yet their effects are very much the same.

TROCHISCI GLYCYRRHIZÆ.

Lond.

Troches of Liquorice.

Take of

Extract of liquorice,

Double-refined sugar, of each ten ounces;

Tragacanth, powdered, three ounces.

Make troches by adding water.

TROCHISCI GLYCYRRHIZÆ, vulgo TROCHISCI BECHICI NIGRI.

Edin.

Liquorice Troches, commonly called *Black pectoral Troches*.

Take of

Extract of liquorice,

Gum arabic, each four ounces;

Double-refined sugar, eight ounces.

Dissolve them in warm water, and strain; then evaporate the mixture over a gentle fire to a proper consistence for forming troches.

THESE compositions are designed for the same purposes as the white pectoral troches above described. The dissolving and straining the extract of liquorice and gum arabic, as now ordered in the last of the above prescriptions, is a considerable improvement; not only as they are by that means more uniformly mixed than they can well be by beating; but likewise as they are thereby purified from the heterogeneous matters, of which both those drugs have commonly no small admixture.

TROCHISCI GLYCYRRHIZÆ CUM OPIO, vulgo TROCHISCI BECHICI CUM OPIO.

Edin.

Liquorice Troches with Opium, commonly called *Pectoral Troches with Opium*.

Take of

Pure opium, two drachms;

Tincture of Tolu, half an ounce.

Grind the opium with the tincture, till it be thoroughly dissolved, then add by degrees, of

Common

Common syrup, eight ounces;
Extract of liquorice, softened
in warm water, five ounces.
While beating them diligently,
gradually sprinkle upon the mixture five ounces of powdered gum arabic. Dry them so as to form troches, each weighing ten grains.

THESE directions for preparing the above troches are so full and particular, that no farther explanation is necessary. Six of the troches prepared in the manner here ordered, contain about one grain of opium. These troches are medicines of approved efficacy in tickling coughs depending on an irritation of the fauces. Besides the mechanical effect of the inviscating matters in involving acid humours, or lining and defending the tender membranes, the opium, must, no doubt, have a considerable share, by more immediately diminishing the irritability of the parts themselves.

TROCHISCI NITRI.

Lond.

Troches of Nitre.

Take of
Purified nitre, powdered, four ounces;
Double-refined sugar, powdered, one pound;
Tragacanth, powdered, six drachms.
With the addition of water, make troches.

TROCHISCI NITRI.

Edinb.

Troches of Nitre.

Take of
Nitre, purified, three ounces;

Double-refined sugar, nine ounces.

Make them into troches with mucilage of gum tragacanth.

THIS is a very agreeable form for the exhibition of nitre; though, when the salt is thus taken without any liquid (if the quantity be considerable), it is apt to occasion uneasiness about the stomach, which can only be prevented by large dilution with aqueous liquors. The *trochisci e nitro* have been said to be employed with success in some cases of difficult deglutition.

TROCHISCI SULPHURIS.

Lond.

Troches of Sulphur.

Take of
Washed flowers of sulphur, two ounces;
Double refined sugar, four ounces.
Rub them together; and, with the mucilage of quince-seeds, now and then added, make troches.

THIS composition is to be considered only as an agreeable form for the exhibition of sulphur, no alteration or addition being here made to its virtues.

TROCHISCI CRETÆ.

Lond.

Troches of Chalk.

Take of
Chalk, prepared, four ounces;
Crabs-claws, prepared, two ounces;
Cinnamon, half an ounce;
Double-refined sugar, three ounces.

Powder them, and add mucilage of gum Arabic, and make troches. *Edin.*

Edin.

Take of

Prepared chalk, four ounces ;

Gum arabic, one ounce ;

Nutmegs, one drachm ;

Double-refined sugar, six ounces.

Powder them, and make them into troches by the addition of water.

TROCHISCI e MAGNESIA.

 Lond.

Troches of Magnesia.

Take of

Burnt magnesia, four ounces ;

Double-refined sugar, two ounces ;

Ginger, powdered, one scruple.

With the addition of mucilage of gum Arabic make troches.

THESE compositions are calculated against the *heartburn* ; in which they often give immediate relief, by absorbing and neutralizing the acid juices that occasion this disorder. The two former

have in general the effect of binding, the latter of opening, the belly ; and from this circumstance the practitioner will be determined in his choice, according to the nature of the case.

TROCHISCI CATECHU.

 Brun.

Troches of Catechu.

Take of

Catechu, one ounce ;

White sugar candy, two ounces ;

Ambergris,

Musk, each ten grains ;

Mucilage of gum tragacanth, as much as is sufficient.

Make them into troches.

THIS medicine has long been in esteem as a slight restraining ; and restringents thus gradually received into the stomach produce better effects than when an equal quantity is taken down at once. These troches would be more palatable, and perhaps not less serviceable, were the musk and ambergris omitted.

C H A P. XXVIII.

P I L L U L Æ.

P I L L S.

TO this form are peculiarly adapted those drugs which operate in a small dose, and whose nauseous and offensive taste or smell require them to be concealed from the palate.

Pills dissolve the most difficultly in the stomach, and produce the most gradual and lasting effects, of all the internal forms. This is, in some cases, of great advantage; in others, it is a quality not at all desirable; and sometimes may even be of dangerous consequence, particularly with regard to emetics; which if they pass the stomach undissolved, and afterwards exert themselves in the intestines, operate there as violent cathartics.

Gummy resins, and inspissated juices, are sometimes soft enough to be made into pills, without addition: where any moisture is requisite, spirit of wine is more proper than syrups or conserves, as it unites more readily with them, and does not sensibly increase their bulk. Light dry powders require

syrup or mucilages; and the more ponderous, as the mercurial and other metallic preparations, thick honey, conserve, or extracts.

Light powders require about half their weight of syrup; of honey, about three-fourths their weight; to reduce them into a due consistence for forming pills. A drachm of the mass will make about fifteen pills of a moderate size.

General Rules for making PILLS.

I.

Gums and inspissated juices, are to be first softened with the liquid prescribed: then add the powders, and continue beating them thoroughly all together, till they be perfectly mixed.

II.

The masses for pills are best kept in bladders, which should be moistened now and then with some of the same kind of liquid that the mass was made up with,

with, or with some proper aromatic oil.

PILULÆ ALOES COMPO. SITÆ.

Lond.

Compound Pills of Aloes.

Take of

Socotorine aloes, powdered, one ounce;

Extract of gentian, half an ounce;

Oil of caraway seeds, two scruples;

Syrup of ginger, as much as is sufficient.

Beat them together.

PILULÆ ALOETICÆ.

Edinb.

Aloetic Pills.

Take of

Socotorine aloes, in powder,

Thick extract of gentian, each two ounces;

Make them into a mass with simple syrup.

THESE pills were formerly directed to be made with Castile

slope; from a notion which Boerhaave and some others were very fond of, that slope promoted the solution of resinous and several other substances in the stomach.

This, however, seems to be a mistake; and, on the contrary, it is highly probable, that the alkaline part of the slope is in most instances separated from the oily by the acid in the stomach; by which decomposition the slope retards instead of promoting the solution of the aloes. These pills have been much used as laxatives: they are very well suited for the costiveness so often attendant on people of sedentary lives. Like other preparations of aloes, they are also

used in jaundice, and in certain cases of obstructed menses. They are seldom used for producing full purging; but if this be required, a scruple or half a drachm of the mass may be made into pills of a moderate size for one dose.

PILULÆ ALOES CUM MYRRHA.

Lond.

Pills of Aloes with Myrrh.

Take of

Socotorine aloes, two ounces; Myrrh,

Saffron, of each one ounce;

Syrup of saffron, as much as is sufficient.

Powder the aloes and myrrh separately; and afterwards beat all the ingredients together into a mass.

PILULÆ ALOES CUM MYRRHA, vulgo PILULÆ RUFI.

Edin.

Pills of Aloes with myrrh, commonly called Rufus's Pills.

Take of

Socotorine aloes, two ounces;

Myrrh, one ounce;

Saffron, half an ounce.

Beat them into a mass with a proper quantity of syrup.

THESE pills have long continued in practice, without any other alteration than in the syrup with which the mass is made up, and in the proportion of saffron. In our last Pharmacopœia, the syrup of wormwood was ordered, which is here judiciously exchanged by the London College for that of saffron; this preserving and improving the brightness of colour in the medicine, which is the charac-

teristic of its goodness. The sassafras, in the composition which is attributed to Rufus, is equal in quantity to the myrrh; and in these proportions the pill was received in our first Pharmacopœia. As the diminution afterwards made in the saffron was grounded on very absurd reasons, viz. "lest the former quantity should occasion a spasmodic cynicus," the London College have now again increased it, and restored the pill to its original form. The virtues of this medicine may be easily understood from its ingredients. Those pills, given to the quantity of half a drachm or two scruples, prove considerably cathartic, but they answer much better purposes in smaller doses as laxatives or alteratives.

PILULÆ ALOES CUM COLOCYNTHIDE, vulgo PILULÆ COCCLE.

Edin.

Pills of aloes with Colocynth, commonly called Pilule Coccie.

Take of

Socotorine aloes,

Scammony, of each two ounces;

Sulphureous vitriolated lixivie, two drachms;

Colocynth, one ounce;

Oil of cloves, two drachms.

Reduce the aloes and scammony into a powder, with the salt; then let the colocynth, beat into a very fine powder, and the oil, be added; lastly, make it into a proper mass with mucilage of gum Arabic.

In these pills we have a very useful and active purgative; and where the simple aloetic pill is not sufficient for obviating costiveness this will often effectually answer

the purpose. Little of their activity can depend upon the salt which enters the composition; but it may assist in dividing the other articles, particularly the aloes and scammony. These pills often produce a copious discharge in cases of obstinate costiveness, when taken to the extent only of five or ten grains; but they may be employed in much larger doses. They are, however, seldom used with the view of producing proper catharsis. Half a drachm of the mass contains about five grains of the colocynth, ten of the aloes, and ten of the scammony.

PILULÆ CUPRI.

Edin.

Copper Pills.

Take of

Cuprum ammoniacum, sixteen grains;

Bread crumb, four scruples;

Water of ammonia, as much as is sufficient to form them into a mass, which is to be divided into thirty-two equal pills.

THESE pills had formerly the name of *Pilule ceruleæ*, but they are now with greater propriety denominated from the metal which is their basis.

Each of these pills weighs about three grains, and contain somewhat more than half a grain of the cuprum ammoniacum. They seem to be the best form of exhibiting this medicine; for the effects of which, see CUPRUM AMMONIACUM.

PILULÆ GALBANI COMPOSITÆ.

*Lond.**Compound Pills of Galbanum.*

Take of

Galbanum,

Opopanax,

Myrrh,

Sagapenum, of each one ounce;

Asafetida, half an ounce;

Syrup of saffron, as much as is sufficient.

Beat them together.

PILULÆ ASAFETIDÆ COMPOSITÆ, vulgo PILULÆ GUMMOSÆ.

*Edinb.**Compound pills of asafetida, commonly called Gum pills.*

Take of

Asafetida,

Galbanum,

Myrrh, each one ounce;

Rectified oil of amber, one drachm.

Beat them into a mass with simple syrup.

PILULÆ FŒTIDÆ.

*Succ.**Fœtid Pills.*

Take of

Asafetida,

Castor, each a drachm and a half;

Salt of amber, half a drachm;

Oil of hartshorn, half a scruple.

Make them into a mass, with tincture of myrrh, to be divided into pills of two grains each.

THESE pills are designed for antihysterics and emmenagogues, and are very well calculated for answering those intentions; half a scruple, a scruple, or more, may be

taken every night or oftener. The fœtid pills of our former pharmacopœia were considerably purgative; the purgative ingredients are now omitted, as the physician may easily, in extemporaneous prescription, compound these pills with cathartic medicines, in such proportions as particular cases shall require.

PILULÆ HYDRARGYRI.

*Lond.**Quicksilver pills.*

Take of

Purified quicksilver, two drachms;

Conserve of roses, three drachms;

Liquorice, finely powdered, one drachm.

Rub the quicksilver with the conserve until the globules disappear; then, adding the liquorice powder, mix them together.

PILULÆ HYDRARGYRI,

vulgo PILULÆ MERCURI-

ALES

*Edin.**Quicksilver pills, commonly called**Mercurial pills.*

Take of

Quicksilver,

Manna, each one ounce;

Powdered liquorice, two ounces.

Grind the quicksilver with the manna in a glass mortar till the globules disappear, adding occasionally a little mucilage of gum arabic; then add the powdered liquorice, and beat the whole with water into a mass, which is to be immediately divided into four hundred and eighty equal pills.

THE quicksilver was formerly directed to be ground with resin of

guaiac.

guaiacum and Castile sope. The former was supposed to coincide with the virtues of the mercury, and the latter was used chiefly to divide the globules of mercury. For this last intention Doctor Saunders used honey: but the substance here ordered by the Edinburgh college, is the most effectual. It is probable that something farther is done in this process than the mere division of the mercurial globules, and that part of the quicksilver is as it were amalgamated with the manna. The same effect will take place when the pills are prepared with extract of liquorice.

The mercurial pill is one of the best preparations of mercury, and may in general supersede most other forms of this medicine. It is necessary to form the mass immediately into pills, as it soon becomes too hard. Sope was undoubtedly a very improper medium for triturating the mercury; it is not only too hard for that purpose, but when the preparation entered the stomach, the alkaline part of the sope, being disengaged by the acid in the compound, the mercury would, in all probability, be immediately separated. The manna and liquorice powder can only be changed by the natural powers of digestion, and can never oppress the stomach. The dose of the pills is from two to four or six in the day, according to the effects we wish to produce.

PILULÆ HYDRARGYRI
MURIATI MÏTIS, five
CALOMELANOS COMPO-
SITÆ, vulgo PILULÆ
PLUMMERI.

Edin.

Pills of mild muriated quicksilver, or compound pills of calomel, commonly called Plummer's pills.

Take of

Mild muriated quicksilver,
Precipitated sulphur of antimony,
each six drachms;

Extract of gentian,

White Spanish sope, each two
drachms.

Let the mild muriated quicksilver be triturated with the sulphur till they be thoroughly mixed, then add the extract and sope, and form a mass with simple syrup.

THESE pills were recommended to the attention of the public near fifty years ago by Dr Plummer, whose name they still bear. He represented them, in a paper which he published in the Edinburgh Medical Essays, as a very useful alternative. The dose of them is from five to twelve grains twice a day.

PILULÆ OPII.

Lond.

Opium Pills.

Take of

Hard purified opium, two
drachms;

Extract of liquorice, one ounce.
Beat them until they are perfectly
united.

PL.

PILULÆ OPII, five THEBACAÆ, vulgo PILULÆ PAFICÆ.

Edinb.

Pills of opium, or thebaic pills, commonly called Pacific Pills.

Take of

Opium, half an ounce;

Extract of liquorice, two ounces;

Castile soap, an ounce and a half; Jamaica pepper, one ounce.

Soften the opium and extract separately with proof spirit, and having beat them into a pulp, mix them; then add the soap and the pepper beat into a powder; and lastly, having beat them well together, form the whole into a mass.

PILULÆ SCILLÆ.

Lond.

Squill pills.

Take of

Fresh dried squills, powdered, one drachm;

Ginger, powdered,

Soap, of each three drachms;

Ammoniacum, two drachms;

Syrup of ginger, as much as is sufficient.

Beat them together.

PILULÆ SCILLITICÆ.

Edin.

Squill pills.

Take of

Dried root of squills, in fine powder, one scruple;

Gum ammoniac,

Lesser cardamom seeds in powder,

Extract of liquorice, each one drachm.

Mix, and form them into a mass with simple syrup.

THESE are elegant and com-
modious forms for the exhibition
of squills, whether for promoting
expectoration, or with the other
intentions to which that medicine
is applied. As the virtue of the
compound is derived chiefly from
the squills, the other ingredients
are often varied in extemporaneous
prescription.

THESE two compositions, though differing in several particulars, are yet fundamentally very much the same. The first is a simple opiate, in which every five grains of the mass contains one of opium; and on the opium alone can we suppose that the activity of the medicine depends.

Although some of the articles, contained in the latter composition, may perhaps be supposed to operate as corrigentia, yet the former composition, which is the most simple, is in general preferable.

Pills similar to the second were contrived by Starkey, and communicated by him to Matthews, under whose name they were some time ago greatly celebrated. The form here given differs considerably from the original, in omitting many ingredients of no great service. Nor indeed are any of the ingredients of much consequence except the opium; their quantity being too inconfi-

PILULÆ RHEI COMPOSITÆ, vulgo PILULÆ STOMACHICÆ.

Edinb.

Compound pills of Rhubarb, commonly called Stomachic Pills.

Take of

Rhubarb, one ounce ;
Socotorine aloes, six drachms ;
Myrrh, half an ounce ;
Vitriolated lixivie, one drachm ;
Essential oil of mint, half a drachm.

Make them into a mass, with a sufficient quantity of syrup of Orange peel.

THIS pill is intended for moderately warming and strengthening the stomach, and gently opening the belly. A scruple of the mass may be taken twice a-day.

PILULÆ BECHERI.

Gen.

Becher's Pill.

Take of

Extract of black hellebore,
Purified myrrh, each one ounce ;
Powder of carduus benedictus, two scruples.

Mix them into a mass according to art, to be dried in the air till it be fit for the formation of pills, each weighing one grain.

THESE pills have been strongly recommended as a most effectual remedy in dropical cases, and have been alleged to unite an evacuant and tonic power. Hence they have been considered as particularly suited to those cases where remarkable weakness and laxity occurs. Under the hands of Dr Becher the inventor, they acquired so great reputation, that after a trial in the military hos-

pitals at Paris, the receipt was purchased by the French king, and published by authority. But like many other nostrums, Becher's pill, since its publication, has by no means supported the reputation which it had when kept a secret. The dose is varied according to circumstances, from one to thirty pills in the course of the day.

PILULÆ de GAMBOGIA.

Dan.

Gamboge Pills.

Take of

Socotorine aloes,
Extract of black hellebore,
Sweet mercury,
Gamboge, each two drachms ;
Distilled oil of juniper, half a drachm ;
Syrup of buckthorn, as much as is sufficient for forming a mass of pills.

FROM the ingredients of which these pills are composed, they must prove a very powerful purgative. The gamboge, from which they derive their name, is unquestionably a very active purge.

PILULÆ e MERCURIO
CORROSIVO ALBO.

Succ.

Pills of corrosive sublimate Mercury.

Take of

Corrosive sublimate,
Purified sal ammoniac, each one scruple ;
Distilled water, as much as is sufficient to dissolve them :
Powder of the root of marsh-mallow, sixteen scruples ;
Honey, two drachms.

Mix them into a mass for the formation

mation of pills, each weighing three grains.

CORROSIVE sublimate in substance was long considered as being so violent in its effects, that it could not with safety be taken internally; but for a considerable time it has been used with advantage under the form of solution, either in water or spirits. But to both these a considerable objection occurs from their disagreeable brassy taste. This objection is however entirely obviated, by reducing the solution, after it is formed, to a solid mass, by means of crumb of bread, or any proper powder: And by the aid of a little sal ammoniac, the solution may be made in a very small quantity of water; so that less of any solid intermedium will be sufficient to bring it to the form of pills. The formula here directed seems well suited for the purpose intended. Each of the pills contains about an eighth of a grain of the corrosive; thus the dose may be easily regulated according to the intention in view. These pills are not unfrequently employed with advantage; both in combating venereal and cutaneous affections, and for the expulsion of worms from the alimentary canal. With the latter of these intentions, a similar pill was particularly recommended by Dr Gardner, in a paper published in the Edinburgh Physical and Literary Essays. And although not received into our pharmacopœia, it has been frequently used at Edinburgh.

PILULÆ PICEÆ.

*Dan.
Tar-pills.*

Take any quantity of tar, and mix

with it as much powdered decampene root as will reduce it to a proper thickness for being formed into pills.

THE powder here mixed with the tar, though of no great virtue, is nevertheless a very useful addition, not only for procuring it a due consistence, but likewise as it divides the resinous texture of the tar, and thus contributes to promote its solution by the animal juices. In the Edinburgh Infirmary, half a drachm of the mass, made into middle-sized pills is given every morning and evening in disorders of the breast, scurvy, &c.

PILULÆ e STYRACE.

*Succ.
Styrac-pills.*

Take of

Strained storax, five scruples;
Extract of liquorice, three drachms;

Opium, one drachm.

Let the opium, dissolved in wine, be added to the other ingredients, so as to form a mass of proper consistence, to be made into pills, each weighing three grains.

THESE pills are principally active in consequence of the opium which they contain; and they are chiefly meant with a view to a slow solution in the stomach, and consequently producing more gradual and lasting effects. One grain of opium is contained in seventeen grains of the mass.

C H A P. XXIX.

ELECTUARIA.

ELECTUARIES.

ELECTUARIES are composed chiefly of powders mixed up with syrups, &c. into such a consistence, that the powders may not separate in keeping, that a dose may be easily taken up on the point of a knife, and not prove too stiff to swallow.

Electuaries receive chiefly the milder alterative medicines, and such as are not ungrateful to the palate. The more powerful drugs, as cathartics, emetics, opiates, and the like (except in officinal electuaries to be dispensed by weight,) are seldom trusted in this form, on account of the uncertainty of the dose; disgustful ones, acrids, bitters, fetids, cannot be conveniently taken in it; nor is the form of an electuary well fitted for the more ponderous substances, as mercurials, these being apt to subside in keeping, unless the composition be made very stiff.

The lighter powders require thrice their weight of honey, or syrup boiled to the thickness of honey, to make them into the consistence of an electuary; of syrups

of the common consistence twice the weight of the powder is sufficient.

Where the common syrups are employed, it is necessary to add likewise a little conserve, to prevent the compound from drying too soon. Electuaries of Peruvian bark, for instance, made up with syrup alone, will often in a day or two grow too dry for taking.

Some powders, especially those of the less grateful kind, are more conveniently made up with mucilage than with syrup, honey, or conserve. The three latter stick about the mouth and fauces, and thus occasion the taste of the medicine to remain for a considerable time: while mucilages pass freely without leaving any taste in the mouth. A little soft extract of liquorice, joined to the mucilage, renders the composition sufficiently grateful, without the inconveniences of the more adhesive sweets.

The quantity of an electuary, directed at a time, in extemporaneous prescription, varies much according to its constituent parts; but

but it is rarely less than the size of a nutmeg, or more than two or three ounces.

ELECTUARIUM CASSIE.
Lond.
Electuary of Cassia.

General rules for making electuaries.

Take of

I.

The rules already laid down for decoctions and powders in general, are likewise to be observed in making decoctions and powders for electuaries.

II.

Gums, impiffated juices, and such other substances as are not pulverisable, should be dissolved in the liquor prescribed: then add the powders by little and little, and keep the whole briskly stirring, so as to make an equal and uniform mixture.

III.

Astringent electuaries, and such as have pulps of fruit in their composition, should be prepared only in small quantities at a time: For astringent medicines lose much of their virtue on being kept in this form, and the pulps of fruit are apt to become sour.

IV.

The superfluous moisture of the pulps should be exhaled over a gentle fire, before the other ingredients are added to them.

V.

Electuaries, if they grow dry in keeping, are to be reduced to a due consistence, with the addition of a little Canary wine, and not with syrup or honey; by this means, the dose will be the least uncertain; a circumstance deserving particular regard, especially in those which contain opium.

The fresh extracted pulp of cassia, half a pound;

Manna, two ounces;

Pulp of tamarinds, one ounce;
Rose-syrup, half a pound.

Beat the manna, and dissolve it over a slow fire in the rose syrup; then add the pulps; and, with a continued heat, evaporate the whole to the proper thickness of an electuary.

ELECTUARIUM CASSIE,
vulgo DIACASSIA.

Edinb.

Electuary of Cassia, commonly called Diacassia.

Take of

Pulp of cassia fistularis, six ounces;

Pulp of tamarinds,

Manna, each an ounce and a half;

Syrup of pale roses, six ounces.

Having beat the manna in a mortar, dissolve it with a gentle heat in the syrup; then add the pulps, and evaporate them with a regularly continued heat to the consistence of an electuary.

THESE compositions are very convenient officinals, to serve as a basis for purgative electuaries and other similar purposes. The tamarinds give them a pleasant taste, and do not subject them, as might be expected, to turn sour. After standing for four months, the composition has been found no sourer than when first made. This electuary will

wife is usefully taken by itself, to the quantity of two or three drachms occasionally, for gently loosening the belly in costive habits.

ELECTUARIUM SCAMMONII.

Lond.

Electuary of Scammony.

Take of

Scammony, in powder, an ounce and a half;

Cloves,

Ginger, of each six drachms;

Essential oil of caraway seeds, half a drachm;

Syrup of roses, as much as is sufficient.

Mix the spices, powdered together, with the syrup; then add the scammony, and lastly the oil of caraway.

This electuary is a warm, brisk purgative. It is a reform of the *Electuarium caryocostinum* of our preceding dispensaries, a composition which was greatly complained of, as being inconvenient to take, on account of the largeness of its dose. A drachm and a half of this, which contains fifteen grains of scammony, is equivalent to half an ounce of the other.

ELECTUARIUM SENNAE.

Lond.

Electuary of Senna.

ELECTUARIUM SENNAE, vulgo ELECTUARIUM LENITIVUM.

Edinb.

Electuary of Senna, commonly called Lenitive Electuary.

Take of

Senna, eight ounces;

3 Z

Figs, one pound;
Pulp of tamarinds,
of cassia,

of prunes, each half a pound;

Coriander seeds, four ounces;

Liquorice, three ounces;

Double-refined sugar, two pounds and an half.

Powder the senna with the coriander seeds, and sift out ten ounces of the mixt powder. Boil the remainder with the figs and liquorice, in four pints of distilled water, to one half; then press out and strain the liquor. Evaporate this strained liquor to the weight of about a pound and an half; then add the sugar, and make a syrup; add this syrup by degrees to the pulps, and lastly mix in the powder.

This electuary is now freed from some superfluous ingredients which were left in it at former revivals; viz. polypody root, French mercury leaves, fenugreek seeds, and lintseed.

It is a very convenient laxative, and has long been in common use among practitioners. Taken to the quantity of a nutmeg or more, as occasion may require, it is an excellent laxative for loosening the belly in costive habits.

ELECTUARIUM CATECHU, vulgo CONFECTIO JAPONICA.

Edinb.

Electuary of Catechu, commonly called Japonic Confection.

Take of

Extract of catechu, four ounces;
Gum kino, three ounces;

Cinnamon,

Nutmeg, each one ounce;

Opium diffused in a sufficient quantity

quantity of Spanish white wine, one drachm and a half; Syrup of dried roses boiled to the consistence of honey, two pounds and a quarter. Mix and make them into an electuary.

THE ingredients in this electuary are extremely well chosen, and are so proportioned to one another, that the quantity of opium is the same as in the diascordium of the former Edinburgh pharmacopœias viz. one grain in ten scruples. The gum kino, now substituted for the tormentil root, is an excellent improvement of the formula.

ELECTUARIUM JOVIALE.

Brun.

Tin Electuary.

Take of

Pure tin,

Quicksilver, each one ounce.

Let them be formed into an amalgam.

Oyster shells, prepared, one ounce;

Reduce the whole to a powder.

Take of

This powder,

Conserve of wormwood, each one ounce, and form an electuary with syrup of mint.

TIN, as we have already had occasion to observe under the article Stannum Pulverisatum, has long been celebrated for the expulsion of tania. And it is also well known, that in mercury we have one of the most powerful anthelmintics. Such a combination as the present, then, might be supposed well suited for the removal of worms from the alimentary canal; and accordingly it has been alleged, that

this electuary has sometimes succeeded after other remedies have failed. It may be taken twice a day, to the extent of two or three drachms for a dose.

ELECTUARIUM GINGIVALE.

Succ.

Electuary for the Gums.

Take of

Powdered myrrh, three drachms;

Cream of tartar,

Cochineal, each a drachm and a half.

Grind them together in a glass mortar; then add

Melted honey, four ounces;

Cloves, in powder, one drachm.

MYRRH, particularly under the form of tincture, has long been a favourite application to the gums, when in a spongy or ulcerated state; but the spirituous menstruum there employed, although sometimes favouring the intention in view, in other instances occurs as an objection to its use. In these cases, the benefit to be derived from the myrrh may be obtained from this electuary, which may always be applied with safety, and sometimes with advantage.

ELECTUARIUM e MANNA.

Succ.

Electuary of Manna.

Take of

Manna,

Refined sugar, pounded,

Fennel water, each two ounces.

Strain the mixture, using expression; then add,

Fine powder of the root of floristine orris, one drachm;

Fresh drawn almond oil, one ounce.

In this electuary we have a gently emollient laxative, which is very useful in these cases, where obipation either arises from indurated feces, or is supported by that cause; but its cathartic powers are by no means considerable.

ELECTUARIUM NITRO-SUM.

Gen.

Nitrous Electuary.

Take of

Purified nitre, half an ounce;

Conserve of roses, four ounces.

Mix them.

UNDER this formula, nitre may be introduced to a considerable extent, without offending the stomach, while at the same time its refrigerant power is combined with the astringency of the roses. From these circumstances it may be advantageously employed in different cases, but particularly in instances of hæmoptysis.

ELECTUARIUM TEREBINTHINATUM.

Succ.

Terebinthinate Electuary.

Take of

Spirit of turpentine, half an ounce;

Honey, one ounce;

Powder of liquorice, as much as

is sufficient for the formation of an electuary.

UNDER this form, the oil of turpentine may be introduced with less uneasiness, than perhaps under almost any other; and it may thus be employed for different purposes, but particularly with a view to its diuretic power. It has been especially celebrated for the cure of obitinate rheumatisms, and above all, for that modification of rheumatism which has the name of *ischias*, and which is found in many instances, obstinately to resist other modes of cure.

LINCTUS LENIENS.

Succ.

Lenient Linctus.

Take of

Gum arabic, bruised, two drachms;

Cherry-water, half an ounce.

By trituration in a mortar, mix with them,

Almond oil, fresh drawn,

Syrup of almonds, each seven ounces.

IN this we have a very agreeable emollient linctus, highly useful in recent catarrhal affections, for lubricating the throat and fauces. It may be taken at pleasure to any extent that the stomach may easily bear.

C H A P. XXX.

C O N F E C T I O N E S.

C O N F E C T I O N S.

ALTHOUGH the London college have separated these from electuaries, yet they differ so little, that in most pharmacopœias they are ranked under the same head. But as no inconvenience arises from the separation; and as we have followed the order of the London pharmacopœia in other particulars, it would be improper to deviate from it in this.

CONFECTIO AROMATICA.

Lond.

Aromatic Confection.

Take of

Zedoary, in coarse powder,
Saffron, of each half a pound;
Distilled water, three pints.
Macerate for twenty-four hours;
then press and strain. Reduce
the strained liquor, by evaporation, to a pint and a half, to
which add,
Compound powder of crabs-
claws, sixteen ounces;
Cinnamon,
Nutmegs, of each two ounces;
Cloves, one ounce;

Smaller cardamom seeds, half an ounce;

Double-refined sugar, two pounds,
Make a confection.

THIS confection is composed of the more unexceptionable ingredients of a composition formerly held in great esteem, and which was called, from its author, CONFECTIO RALEIGHANA. The original confection was composed of no less than five and twenty ingredients.

The confection, as now reformed, is a sufficiently grateful and moderately warm cordial; and frequently given with that intention, in doses of from eight or ten grains to a scruple or upwards, in boluses or draughts. The formula might perhaps be still more simplified without any loss. The crabs-claw powder does not appear to be very necessary, and is inserted rather in compliance with the original, than from its contributing any thing to the intention of the medicine; and the following formula of the Edinburgh pharmacopœia seems preferable to that of the

the London, even in its present improved state.

ELECTUARIUM AROMATICUM, vulgo CONFECTIO CARDIACA.

Edinb.

Aromatic Electuary, commonly called Cordial Confection.

Take of

Aromatic powder, three ounces;
Syrup of orange peel, boiled to the consistency of honey, six ounces.

Mix them by rubbing them well together so as to form an electuary.

Is the above simple and elegant formula, a number of trifling ingredients are rejected, and those substituted in their place are medicines of approved efficacy. This preparation is therefore an useful remedy for the purposes expressed in its title.

CONFECTIO OPIATA.

Lond.

Confection of Opium.

Take of

Hard purified opium, powdered, six drachms;

Long pepper,

Ginger,

Caraway seeds, of each two ounces;

Syrup of white poppy, boiled to the consistency of honey, three times the weight of the whole.

Mix the purified opium carefully with the syrup gently heated: then add the rest, rubbed to powder.

ELECTUARIUM OPIATUM, vulgo ELECTUARIUM THEBAICUM.

Edinb.

Opiate Electuary, commonly called Thebaic Electuary.

Take of

Aromatic powder, six ounces;
Virginian snake-root, in fine powder, three ounces;

Purified opium diffused in a sufficient quantity of Spanish white wine, half an ounce;

Clarified honey, thrice the weight of the powders.

Mix them, and form an electuary.

THESE compositions consist of very powerful ingredients, and are doubtless capable of answering every end that can be reasonably expected from the more voluminous Theriaca of Andromachus. The London college also had formerly their Theriac composed of the less exceptionable ingredients of Andromachus's. But as these medicines have for a long time been chiefly employed for external purposes, by the way of cataplasm, *Theriaca Londinensis* now omitted, and its place supplied by a cataplasm composed of a few well-chosen articles under the name of *Cataplasma e cymina*; of which hereafter. For internal use, none of the theriacs are at present so much regarded as they have been heretofore; practitioners having introduced in their room extemporaneous boluses of Virginian snake-root, camphor, contrayerva, and the like; which answer all their intentions, with this advantage, that they may be given either with or without opium; an ingredient which renders the others prejudicial in cases where they might otherwise be proper.

With

With regard to the quantity of opium in the foregoing compositions, one grain of it is contained in thirty six grains of the *Confectio opiata*, and in a drachm of the *Electuarium opiatum*. The proportion of opium will vary a little, according to the time that they have been kept; their moisture by degrees exhaling, so as to leave the remainder stronger of the opium than an equal weight was at first. A change of this kind is taken notice of by many writers, but falsely attributed to an imaginary fermentative quality of the ingredients; by which they were supposed, from their multiplicity and contrariety, to be continually exalting and improving the virtues of each other.

A good deal of care is requisite in making these compositions, to prevent the waste which is apt to happen in the pounding, and which would render the proportion of opium to the other ingredients precarious. The intention of dissolving the opium in wine, for these and other electuaries, is, that it may be more uniformly mixed with the rest.

THESE compositions fully supply the place of two articles, which though long banished from the shops, we shall here subjoin; as examples of the amazing height to which composition in medicine had at one time proceeded.

MITHRIDATUM, five CON- FECTIO DEMOCRATIS.

Mithridate, or the Confectio of Democrates.

Take of

Cinnamon, fourteen drachms;
Myrrh, eleven drachms;
Agaric,

Clarified

Indian nard,
Ginger,
Saffron,
Seeds of mithridate mustard,
Frankincense,
Chio turpentine, each ten
drachms;
Camels hay,
Costus, or in its stead, Zedoary,
Indian leaf, or in its stead, Mace,
Stechas,
Long pepper,
Hartwort seeds,
Hypocistis,
Storax strained,
Opoponax,
Galbanum strained,
Opobalsam, or in its stead, ex-
pressed oil of nutmegs,
Russian castor, each one ounce;
Poley mountain,
Scordium,
Carpobalsam, or in its stead, Cu-
bebs,
White pepper,
Candy carrot seed,
Bdellium strained, each seven
drachms;
Celtic nard,
Gentian root,
Dittany of Crete,
Red rose,
Macedonian parsley seed,
Lesser cardamom seeds, husked,
Sweet fennel seed,
Gum Arabic,
Opium strained, each five
drachms;
Calamus aromaticus,
Wild valerian root,
Aniseed,
Sagapenum, strained, each three
drachms;
Meum athamanticum,
St John's wort,
Acacia, or in its stead, Terra Japo-
nica,
Bellies of skinks, each two
drachms and a half;

Clarified honey, thrice the weight of all the other ingredients.

Warm the honey, and mix with it the opium dissolved in wine; melt the storax, galbanum, turpentine, and opobalsam (or expressed oil of nutmegs) together in another vessel, continually stirring them about, to prevent their burning; with these so melted, mix the hot honey, at first by spoonfuls, and afterwards in larger quantities at a time; when the whole is grown almost cold, add by degrees the other spices reduced into powder.

THERIACA ANDROMACHIL.

Theriaca of Andromachus, or Venice Treacle.

Take of

Troches of squills, half a pound,
Long pepper,

Opium, strained,

Vipers, dried, each three ounces;
Cinnamon,

Opobalsam, or in its stead, expressed oil of nutmegs, each two ounces;

Agaric,

Florence orris root,

Scordium,

Red roses,

Navew seeds,

Extract of liquorice, each an ounce and a half;

Indian nard,

Saffron,

Anomum,

Myrrh,

Costus, or in its stead, Zedoary,

Camel's hay, each one ounce;

Cinquefoil root,

Rhubarb,

Ginger,

Indian leaf, or in its stead, Mace,

Dittany of Crete,

Horehound leaves,

Calamint leaves,

Stechas,

Black pepper,

Macedonian parsley seed,

Olibanum,

Chio turpentine,

Wild valerian root, each six drachms;

Gentian root,

Celtic nard,

Spiguel,

Poley mountain

St John's wort } leaves,

Groundpine

Germander tops with the seed,

Carobalsam, or in its stead Cubes,

Aniseed,

Sweet fennel seed,

Lesser cardamom seeds, husked,

Bishop's weed

Hartwort } seeds,

Treacle mustard

Hypocistis,

Acacia, or in its stead, Japan earth,

Gum Arabic,

Storax, strained,

Sagapenum, strained,

Terra Lemnia, or in its stead

bole armenic, or French bole,

Green vitriol, calcined, each

half an ounce;

Small (or in its stead, the long)

birthwort root,

Lesser centaury tops,

Candy carrot seed,

Opopanax,

Galbanum, strained,

Russia castor,

Jews pitch, or in its stead white

amber prepared,

Calamus aromaticus, each two

drachms;

Clarified honey, thrice the

weight of all the other in-

gredients.

Let these ingredients be mixed together, after the same manner as directed

directed in making the mithridate.

THESE celebrated electuaries are often mentioned by medical writers, and may serve as examples of the wild exuberance of composition which the superstition of former ages brought into vogue. The theriaca is a reformation of the Mithridate, made by Andromachus physician to Nero : the mithridate itself is said to have been found in the cabinet of Mithridates king of Pontus. The first publishers of this pompous arcanum were very extravagant in their commendations of its virtues ; the principal of which was made to consist in its being a most powerful preservative against all kinds of venom ; who ever took a proper quantity in a morning, was ensured from being poisoned during that whole day : this was confirmed by the example of its supposed inventor, who, as Celsus informs us, was by its constant use so fortified against the commonly reputed poisons, that none of them would have any effect upon him ; but the notions of

poisons which prevailed in those ruder ages were manifestly erroneous. Before experience had furnished mankind with a competent knowledge of the powers of simples, they were under perpetual alarms from an apprehension of poisons, and busied themselves in contriving compositions which should counteract their effects, accumulating together all those substances which they imagined to be possessed of any degree of alexipharmic power. Hence proceed the voluminous antidotes which we meet with in the writings of the ancient physicians ; yet it does not appear that they were acquainted with any real poison except the cicuta, aconitum, and bites of venomous animals ; and for these they knew of no antidote whatever. Even admitting the reality of the poisons, and the efficacy of the several antidotes separately, the compositions could no more answer the purposes expected from them, than the accumulating of all the medicinal simples into one form could make a remedy against all diseases.

C H A P. XXXI.

AQUÆ MEDICATÆ.

MEDICATED WATERS.

WE have already taken notice of many articles which are either dissolved in water, or communicate their virtues to it. And in one sense of the word, these may be called *medicated waters*. Sometimes this impregnation is effected by the aid of heat, sometimes without it, and thus are formed decoctions, infusions, and the like. But among those articles referred to in this chapter, there takes place mere watery solution only, and they are used solely with the intention of acting topically in the way of lotion, injection, or, at the utmost, of gargarism.

AQUA ALUMINIS COMPOSITA.

Lond.

Compound Alum-water.

Take of

Alum,

Vitriolated zinc, of each half an ounce;

Boiling distilled water, two pints.

4 A

A.

Pour the water on the salts in a glass vessel, and strain.

THIS water was long known in our shops under the title of *Aqua aluminosa Batana*.

Bates directed the salts to be first powdered and melted over the fire; but this is needless trouble, since the melting only evaporates the aqueous parts, which are restored again on the addition of the water.

This liquor is used for cleansing and healing ulcers and wounds; and for removing cutaneous eruptions, the part being bathed with it hot three or four times a day. It is sometimes likewise employed as a collyrium; and as an injection in the gonorrhœa and fluor albus, when not accompanied with virulence.

AQUA CUPRI AMMONIACI.

venous eruptions, redness, inflammation, &c.

Edin.

Water of ammoniated Copper.

Take of

Lime-water, one pint ;
Sal ammoniac, one drachm.
Let them stand together, in a copper vessel, till the ammonia be saturated with copper.

THIS water is at present pretty much in use as a detergent of foul and obstinate ulcers, and for taking away specks or films in the eyes. The copper contributes more to its colour than to its medicinal efficacy ; for the quantity of the metal dissolved is extremely small.

This preparation, directed by the London College, is much inferior to the *Aqua Argentinis ammoniacale* of the Edinburgh pharmacopœia, mentioned in page 420.

AQUA LITHARGYRI ACETATI COMPOSITA.

Edin.

Compound Water of acetated Litharge.

Take of

Acetated water of litharge, two drachms ;

Distilled water, two pints ;

Proof-spirit, two drachms.

Mix the spirit with the acetated water of litharge ; then add the distilled water.

THIS liquor is of the same nature with solution of *saccharum saturni*, and is analogous to the Vegetable mineral water of Mr Goulard. It is only used externally, as a cosmetic against cutaneous eruptions, redness, inflammation, &c.

AQUA ZINCI VITRIOLATI CUM CAMPHORA.

Edin.

Water of vitriolated Zinc with Camphor.

Take of

Vitriolated zinc, half an ounce ;
Camphorated spirit, half an ounce by measure ;

Boiling water two pints.

Mix, and filter through paper.

THIS is an improved method of forming the *Aqua vitriolica camphorata* of the former editions of the London pharmacopœia. It is used externally as a lotion for some ulcers, particularly those in which it is necessary to restrain a great discharge. It is also not unfrequently employed as a collyrium in some cases of ophthalmia, where a large discharge of watery fluid takes place from the eyes with but little inflammation ; but when it is to be applied to this tender organ, it ought first, at least, to be diluted by the addition of more water.

AQUA ZINCI VITRIOLATI, vulgo AQUA VITRIOLICA.

Edin.

Vitriolated water of Zinc, commonly called Vitriolic Water.

Take of

Vitriolated zinc, sixteen grains ;
Water, eight ounces ;
Diluted vitriolic acid, fifteen drops.

Dissolve the vitriolated zinc in the water,

water, and then adding the acid, the slighter inflammations will frequently yield to this medicine, without any other assistance : in

WHERE the eyes are watery or the more violent ones, venesection inflamed, this solution of vitriolated zinc is a very useful application : and cathartics are to be premised to its use.

C H A P. XXXII.

E M P L A S T R A.

P L A S T E R S.

PLASTERS are composed chiefly of oily and unctuous substances, united with powders into such a consistence, that the compound may remain firm in the cold without sticking to the fingers; that it may be soft and pliable in a low degree of heat, and that by the warmth of the human body it be so tenacious as readily to adhere both to the part on which it is applied, and to the substance on which it is spread.

There is, however, a difference in the consistence of plasters, according to the purposes they are to be applied to: Thus, such as are intended for the breast and stomach should be very soft and yielding; while those designed for the limbs are made firmer and more adhesive. An ounce of expressed oil, an ounce of yellow wax, and half an ounce of any proper powder, will make a plaster of the first consistence; for a hard one, an ounce more of wax, and half an ounce more of powder

may be added. Plasters may likewise be made of resins, gummy resins, &c. without wax, especially in extemporaneous prescription: for officinals these compositions are less proper, as they soon grow too soft in keeping, and fall flat in a warm air.

It has been supposed, that plasters might be impregnated with the specific virtues of different vegetables, by boiling the recent vegetable with the oil employed for the composition of the plaster. The coction was continued till the herb was almost crisp, with care to prevent the matter from contracting a black colour: after which the liquid was strained off, and set on the fire again, till all the aqueous moisture had exhaled. We have already observed, that this treatment does not communicate to the oils any very valuable qualities, even relative to their use in a fluid state; much less can plasters, made with such oils, receive

ceive any considerable efficacy from the herbs.

Calces of lead, boiled with oils, unite with them into a plaster of an excellent consistence, and which makes a proper basis for several other plasters.

In the boiling of these compositions, a quantity of water must be added, to prevent the plaster from burning and growing black. Such water, as it may be necessary to add during the boiling, must be previously made hot; for cold liquor would not only prolong the process, but likewise occasion the matter to explode, and be thrown about with violence, to the great danger of the operator: this accident will equally happen on the addition of hot water, if the plaster be extremely hot.

EMPLASTRUM AMMONIACUM HYDRARGYRO.

Lond.

Ammoniacum Plaster with Quick-silver.

Take of

Strained ammoniacum, one pound;

Purified quicksilver, three ounces;

Sulphurated oil, one drachm, or what is sufficient.

Rub the quicksilver with the sulphurated oil until the globules disappear; then add, by a little at a time, the melted ammoniacum, and mix them.

THIS is a very well contrived mercurial plaster. The ammoniacum in general affords a good basis for the application of the mercury. In some cases, however, it is not sufficiently adhesive; but this inconvenience may be remedied by

the addition of a small quantity of turpentine.

EMPLASTRUM CANTHARIDIS.

Lond.

Plaster of Spanish Flies.

Take of

Spanish flies, finely powdered, one pound;

Wax plaster, two pounds;

Prepared hogs lard, half a pound.

Having melted the plaster and lard, sprinkle in the flies, reduced to a very fine powder a little before they coagulate.

EMPLASTRUM CANTHARIDUM, vulgo VESICATORIUM.

Edinb.

Plaster of Spanish flies, commonly called Blistering plaster.

Take of

Mutton suet,

Yellow wax,

White resin,

Spanish flies, each equal weights.

Beat the Spanish flies into a fine powder, and add them to the other ingredients, previously melted, and removed from the fire.

BOTH these formulæ are very well suited to excite blisters; for both are of a proper consistence, and sufficient degree of tenacity, which are here the only requisites. Cantharides of good quality, duly applied to the skin, never fail of producing blisters. When, therefore, the desired effect does not take place, it is to be ascribed to the flies either being faulty at first, or having their activity afterwards

wards destroyed by some accidental circumstance; such as too great heat in forming, or in spreading the plaster. When due attention is paid to these particulars, the simple compositions now introduced answer the purpose better than those compound plasters with mustard-seed, black pepper, vinegar, verdegriis, &c. which had formerly a place in our pharmacopœias. It is not however improvable, that the pain of blistering-plasters might be considerably diminished by the addition of a portion of opium, without preventing the good effects otherwise to be derived from them.

EMPLASTRUM CERÆ COMPOSITUM.

Lond.

Compound Wax-plaster.

Take of

Yellow wax,

Prepared mutton suet, of each three pounds;

Yellow resin, one pound.

Melt them together, and strain the mixture while it is fluid.

EMPLASTRUM SIMPLEX, five EEMPLASTRUM CERÆ.

Edinb.

Simple, or Wax-plaster.

Take of

Yellow wax, three parts;

Mutton suet,

White resin, each two parts.

Melt them together into a plaster.

THIS plaster had formerly the title of *Emplastrum atrabæus*, and was chiefly employed as a dressing after blisters, to support some discharge; and is a very well contrived plaster for that purpose. Some-

times however it irritates too much on account of the resin; and hence, when designed only for dressing blisters, the resin ought to be entirely omitted, unless where a continuance of the pain and irritation, excited by the vesicatory, is required. Indeed plasters of any kind are not very proper for dressing blisters: their confidence makes them sit uneasy, and their adhesiveness renders the taking them off painful. Cerates, which are softer and less adhesive, appear much more eligible: the *Ceratum spermatis ceti* will serve for general use; and for some particular purposes, the *Ceratum resine flavæ* may be applied.

EMPLASTRUM CUMINI.

Lond.

Cumin Plaster.

Take of

Cumin seeds,

Caraway seeds,

Bay-berries, of each three ounces;

Burgundy pitch, three pounds;

Yellow wax, three ounces.

Melt the pitch and wax together, and mix with them the rest of the ingredients, powdered, and make a plaster.

THIS plaster stands recommended as a moderately warm discutient; and is directed by some to be applied to the hypogastric region, for strengthening the viscera, and expelling flatulencies: but it is a matter of great doubt, whether it derives any virtue either from the article from which it is named, or from the caraway seeds or bay-berries which enter its composition.

EM-

EMPLASTRUM ASEFETIDÆ, vulgo EMPLASTRUM ANTIHYSTERICUM.

Edinb.

Plaster of Asafetida, commonly called Antihysteric Plaster.

Take of

Litharge plaster,

Asafetida, strained, each two parts;

Yellow wax,

Strained galbanum, each one part.

Mix them melted with a gentle heat, and make them into a plaster.

THIS plaster is applied to the umbilical region, or over the whole abdomen, in hysteric cases; and sometimes with good effect; but probably more from its effect as giving an additional degree of heat to the part, than from any influence derived from the fetid gums. It has indeed been alleged, that from the application of this plaster to the abdomen, the tale of asafetida can be distinctly perceived in the mouth; and it is not improbable, that some absorption of its active parts may take place by the lymphatic vessels of the surface; while, at the same time, the asafetida thus applied must constantly, in some degree, act on the nerves of the nose. But, in both these ways, its influence can be inconsiderable only; and much more effect may be obtained from a very small quantity taken internally.

EMPLASTRUM LADANI COMPOSITUM.

Lond.

Compound Ladanum Plaster.

Take of

Ladanum, three ounces;

Frankincense, one ounce;

Cinnamon, powdered,

Expressed oil of mace, of each half an ounce;

Essential oil of mint, one drachm.

To the melted frankincense add first the ladanum, softened by heat; then the oil of mace. Mix these afterwards with the cinnamon and oil of mint, and beat them together, in a warm mortar, into a plaster. Let it be kept in a close vessel.

THIS has been considered as a very elegant stomach plaster. It is contrived so as to be easily made occasionally (for these kinds of compositions, on account of their volatile ingredients, are not fit for keeping,) and to be but moderately adhesive, so as not to offend the skin, and that it may without difficulty be frequently renewed; which these sorts of applications, in order to their producing any considerable effect, require to be.

EMPLASTRUM LITHARGYRI.

Lond.

Litharge plaster.

Take of

Litharge, in very fine powder; five pounds.

Olive oil, a gallon;

Water, two pints;

Boil them with a slow fire, constantly stirring until the oil and litharge unite, and have the consistence

sistence of a plaster. It will be proper to add more boiling water, if the water that was first added be nearly consumed before the end of the process.

EMPLASTRUM LITHARGYRI, vulgo EMPLASTRUM COMMUNE.

Edinb.

Litharge plaster, commonly called Common plaster.

Take of

Litharge, one part;

Oil olive, two parts.

Boil them, adding water, and constantly stirring the mixture till the oil and litharge be formed into a plaster.

THE heat in these processes should be gentle, and the matter kept constantly stirring, otherwise it swells up, and is apt to run over the vessel. If the composition prove discoloured, the addition of a little white lead and oil will improve the colour.

These plasters, which have long been known under the name of *Diacylon*, are the common application in excoriations of the skin, slight flesh wounds, and the like. They keep the part soft, and somewhat warm, and defend it from the air, which is all that can be expected in these cases from any plaster. Some of our industrious medicine-makers have thought these purposes might be answered by a cheaper composition, and accordingly have added a large quantity of common whiting and hogs lard: this, however, is by no means allowable, not only as it does not stick so well, but likewise as the lard is apt to grow rancid and acrimonious. The

counterfeit is distinguishable by the eye.

EMPLASTRUM LITHARGYRI COMPOSITUM.

Lond.

Compound Litharge plaster.

Take of

Litharge-plaster, three pounds;

Strained galbanum, eight ounces;

Turpentine, ten drachms;

Frankincense, three ounces.

The galbanum and turpentine being melted with a slow fire, mix with them the powdered frankincense, and afterwards the litharge-plaster melted with a very slow fire, and make a plaster.

Edinb.

EMPLASTRUM GUMMOSUM.

Edinb.

Gum Plaster.

Take of

Litharge plaster, eight parts;

Gum ammoniacum, strained,

Strained galbanum,

Yellow wax, each one part.

Melt them together, and make them into a plaster.

BOTH these plasters are used as digestives and suppuratives; particularly in abscesses, after a part of the matter has been matured and discharged, for suppurating or discharging the remaining hard part; but it is very doubtful whether they derive any advantage from the gums entering their composition.

EM.

EMPLASTRUM LITHAR-
GYRI CUM HYDRAR-
GYRO.

Lond.

Litharge plaster with Quicksilver.

Take of

Litharge-plaster, one pound ;
Purified quicksilver, three ounces ;

Sulphurated oil, one drachm, or
what is sufficient.

Make the plaster in the same manner as the ammoniacum-plaster with quicksilver.

EMPLASTRUM HYDRAR-
GYRI, vulgo CERULEUM.

Edinb.

Quicksilver or mercurial plaster, commonly called blue plaster.

Take of

Olive oil,

White resin, each one part ;

Quicksilver, three parts ;

Litharge plaster, six parts.

Melt the oil and resin together, and when this mixture is cold, let the quicksilver be rubbed with it till the globules disappear ; then add by degrees the litharge plaster, melted, and let the whole be accurately mixed.

THESE mercurial plasters are considered as powerful resolvents and discutients, acting with much greater certainty for these intentions than any composition of vegetable substances alone ; the mercury exerting itself in a considerable degree, and being sometimes introduced into the habit in such quantity as to affect the mouth. Pains in the joints and limbs from a venereal cause, nodes, tophti, and beginning indurations,

4 B

of the glands, are said sometimes to yield to them.

EMPLASTRUM LITHAR-
GYRI CUM RESINA.

Lond.

Litharge plaster with Resin.

Take of

Litharge plaster, three pounds ;
Yellow resin, half a pound.

To the litharge plaster, melted with a very slow fire, add the powdered resin ; mix them well, and make a plaster.

EMPLASTRUM RESINO-
SUM, vulgo EMPLASTRUM
ADHÆSIVUM.

Edinb.

Resinous plaster, commonly called Sticking plaster.

Take of

Common plaster, five parts ;

White resin, one part.

Melt them together and make a plaster.

THESE plasters are chiefly used as adhesives for keeping on other dressings, &c.

EMPLASTRUM PICIS BUR-
GUNDICÆ COMPOSITUM.

Lond.

Compound Burgundy Pitch Plaster.

Take of

Burgundy pitch, two pounds ;

Ladanum, one pound ;

Yellow resin,

Yellow wax, of each four ounces ;

Expressed oil of mace, one ounce.

To the pitch, resin, and wax, melted together, add first the

ada-

ladanum, and then the oil of EMPLASTRUM SAPONACEUM.

Edinb.

Saponaceous Plaster.

This plaster was at one time much celebrated under the title of *Emplastrum cephalicum*, the name which it formerly held in our pharmacopœias. It was applied in weakness or pains of the head, to the temples, forehead, &c. and sometimes likewise to the feet. Schulze relates, that an inveterate rheumatism in the temples, which at times extended to the teeth, and occasioned intolerable pain, was completely cured in two days by a plaster of this kind (with the addition of a little opium) applied to the part, after many other remedies had been tried in vain. He adds, that a large quantity of liquid matter exuded under the plaster in drops, which were so acrid as to corrode the cuticle: but it is probable, that this was much more the effect of the Burgundy pitch than of any other part of the composition; for when applied to very tender skin, it often produces even vesication, and in most instances operates as a rubefacient or *emplastrum calidum*: and as far as it has any good effect in headache, it is probable that its influence is to be explained on this ground.

EMPLASTRUM SAPONIS.

Lond.

Sope-plaster.

Take of

Sope, half a pound;

Litharge plaster, three pounds.

Mix the sope with the melted litharge-plaster, and boil them to the thickness of a plaster.

Take of

Litharge plaster, four parts;

Gum plaster, two parts;

Castile sope, scraped, one part.

To the plasters, melted together, add the sope; then boil for a little, so as to form a plaster.

THESE plasters have been supposed to derive a resolvent power from the sope; and in the last, the addition of the gums is supposed to promote the resolvent virtue of the sope; but it is a matter of great doubt, whether they derive any material advantage from either addition.

EMPLASTRUM THURIS COMPOSITUM.

Lond.

Compound Frankincense-plaster.

Take of

Frankincense, half a pound;

Dragon's blood, three ounces;

Litharge plaster, two pounds.

To the melted litharge-plaster add the rest, powdered.

THIS plaster had formerly in the London pharmacopœia the title of *Emplastrum roborans*, and is a reformation of the complicated and injudicious composition described in former pharmacopœias, under the title of *Emplastrum ad herniam*. Though far the most elegant and simple, it is as effectual for that purpose as any of the medicines of this kind. If constantly worn with a proper bandage, it will, in children, frequently do service; though, perhaps, not so much from any strengthening

ing quality of the ingredients, as from its being a soft, close, and adhesive covering. It has been supposed that plasters composed of styp-tic medicines constrict and strengthen the part to which they are applied, but on no very just foundation; for plasters in general relax rather than astringe, the unctuous ingredients necessary in their composition counteracting and destroying the effect of the others.

EMPLASTRUM LITHARGYRI COMPOSITUM, vulgo EMPLASTRUM ROBORANS.

Edinb.

Compound Litharge-plaster, commonly called Strengthening Plaster.

Take of

Litharge plaster, twenty-four parts;

White resin, six parts;

Yellow-wax,

Oil olive, each three parts;

Burnt vitriolated iron, eight parts.

Grind the colcothar with the oil, and then add it to the other ingredients previously melted.

This plaster is laid round the lips of wounds and ulcers over the other dressings, for defending them from inflammation and a fluxion of humours; which, however, as Mr Sharp very justly observes, plasters, on account of their consistence, tend rather to bring on than to prevent. It is also used in weaknesses of the large muscles, as of the loins; and its effects seem to proceed from the artificial mechanical support given to the part, which may also be done by any other plaster that adheres with equal firmness

EMPLASTRUM de BELLADONNA.

Brun.

Deadly Night Shade plaster.

Take of

The juice of the recent herb of belladonna,

Linseed oil, each nine ounces;

Yellow wax, six ounces;

Venice turpentine, six drachms;

Powder of the herb of belladonna, two ounces.

Let them be formed into a plaster according to art.

THERE can be no doubt, that the belladonna, externally applied, has a very powerful influence, both on the nerves and blood vessels of the part; and thus it has very considerable effect both on the circulation and state of sensibility of the part; and when applied under the form of this plaster, especially in affections of the mammae and scrotum, it has been said to have very powerful influence in alleviating pain, in discharging tumours, and in promoting a favourable suppuration.

EMPLASTRUM ad CLAVO'S PEDUM

Dan.

Corn Plaster.

Take of

Galbanum, dissolved in vinegar, and again inspissated, one ounce;

Pitch, half an ounce;

Diachylon, or common plaster, two drachms.

Let them be melted together; and then mix with them;

Verdegriis, powdered,

Sal ammoniac, each one scruple; And make them into a plaster.

Ov

Or this plaster, as well as the former, we can say nothing from our own experience. It has been celebrated for the removal of corns, and for alleviating the pain which they occasion; and it is not improbable that it may sometimes have a good effect from the corrosive articles which it contains: but in other cases from this very circumstance, it may tend to aggravate the pain, particularly in the first instance.

EMPLASTRUM e CONIO.

Succ.

Hemlock-plaster.

Take of

Yellow wax, half a pound;
Oil olive, four ounces;
Gum ammoniacum, half an ounce;

After they are melted together, mix with them,
Powdered herb of hemlock, half a pound.

THIS corresponds very nearly with the Emplastrum de cicuta merly a place, in our pharmacopœias, and was supposed to be a powerful cooler and discutient, and to be particularly serviceable against swellings of the spleen and distentions of the hypochondria. For some time past, it has been among us intirely neglected; but the high resolvent power Dr Stoerk has discovered in Hemlock, and which he found it to exert in this as well as in other forms, intitle it to farther trials. The plaster appears very well contrived, and the additional ingredients well chosen for assisting the efficacy of the hemlock.

EMPLASTRUM CORROSI- VUM.

Gen.

Corrosive Plaster.

Take of

Corrosive sublimate mercury, half a drachm;
Hogs lard, half an ounce;
Yellow wax, two drachms.
Mix them according to art.

THERE can be no doubt that the hydragryus munitus here employed is a very powerful corrosive; and there may be some cases in which it is preferable to other articles of the tribe of caustics: But this would seem to be a very uneconomical mode of applying it, as but a very small portion of what enters the plaster can act; and even that portion must have its action much restrained by the unctuous matters with which it is combined.

EMPLASTRUM e FŒNU- GRÆCO, vulgo de MU- CILAGINIBUS.

Gen.

Plaster of Fenugreek, or of Mustard-seed.

Take of

Fenugreek-seed, two ounces;
Lintseed-oil, warm, half a pound.
Infuse them according to art, and strain; then,

Take of

Yellow wax, two pounds, and a half;
Gum ammoniacum, strained, six ounces;

Turpentine, two ounces.
Melt the gum ammoniacum with the turpentine, and by degrees add the oil and wax melted in another vessel, so as to form a plaster.

THIS

THIS plaster had formerly a place in our pharmacopœias, but was rejected; and although still held in esteem by some, it is probably of no great value; at least, it would seem to derive but little either from the fengreek seed, with which it is now made, or from the oil and mucilages which formerly entered its composition.

EMPLASTRUM ex HYOSCY- AMO.

Succ.

Henbane plaster.

THIS is directed to be prepared in the same manner as the emplastrum e conio, or hemlock plaster.

FROM the well known sedative power of this plant, as affecting the nervous energy of the part to which it is applied, we might reasonably conclude that good effects may be obtained from it when used under the form of plaster; and accordingly it has been with advantage employed in this manner, for allaying pain and resolving swelling, in cases of scirrhus and cancer.

EMPLASTRUM PICEUM.

Ross.

Pitch plaster.

Take of

White resin, six ounces;
Ship pitch, seven ounces;
Yellow wax, five ounces.

Melt them, and form them into a plaster.

PITCH, applied externally, has been supposed to act on two principles, by its warmth and by its adhesive quality. In the former way it may have some effect; but it has much more influence in the latter; and particularly it has thus been found to produce a cure in cases of tinea capitis. When a pitch-plaster is applied to the affected part of the hairy scalp, and allowed to remain there for a few days, it becomes so attached to the parts, that it cannot be removed without bringing with it the bulbs of the hair in which the disease is seated; and by this means a radical cure is obtained, after every other remedy has been tried in vain. The cure however is a painful one, and not without danger: for in some instances, inflammations of an alarming nature have been excited by the injury thus done to the parts. Hence this mode of cure is rarely had recourse to till others have been tried without effect: and when it is employed, if the disease be extensive, prudent practitioners direct its application only to a small portion of the scalp at a time, and after one part is fully cured, by application to another in succession, the affection may be soon completely overcome. With this intention it is most common to employ the pitch in its pure state: but the plaster here directed, while it is no less adhesive, is more manageable and flexible.

C H A P. XXXIII.

UNGUENTA ET LINIMENTA.

OINTMENTS AND LINIMENTS.

OINTMENTS and liniments differ from plasters little otherwise than in consistence. Any of the officinal plasters, diluted with so much oil as will reduce it to the thickness of stiff honey, forms an ointment: by farther increasing the oil, it becomes a liniment.

In making these preparations, the Edinburgh college direct, that fat and resinous substances are to be melted with a gentle heat; then to be constantly stirred, sprinkling in at the same time the dry ingredients, if any such are ordered, in the form of a very fine powder, till the mixture on diminishing the heat becomes stiff.

UNGUENTUM ADIPIS SULLÆ.

Lond.

Ointment of Hog's lard.

Take of

Prepared hog's lard, two pounds;

Rose water, three ounces.

Beat the lard with the rose-water

until they be mixed; then melt the mixture with a slow fire, and set it apart that the water may subside; after which pour off the lard from the water, constantly stirring until it be cold.

In the last edition of the London pharmacopœia, this was styled *Unguentum simplex*, the name given by the Edinburgh college to the following.

UNGUENTUM SIMPLEX.

Edinb.

Simple Ointment.

Take of

Olive oil, five parts;

White wax, two parts.

BOTH these ointments may be used for softening the skin and healing chaps. The last is, however, preferable, on account of its being of one uniform consistence. For the same reason it is also to be preferred as the basis of other more compounded ointments.

UN.

UNGUENTUM ÆRUGINIS.

*Edinb.**Ointment of Verdegris.*

Take of
Resinous ointment, fifteen
parts;
Verdegris, one part.

THIS ointment is used for cleaning sores, and keeping down fungous flesh. Where ulcers continue to run from a weakness in the vessels of the part, the tonic powers of copper promise considerable advantage.

It is also frequently used with advantage in cases of ophthalmia, depending on scrophula, where the *apoplezæ* are principally affected; but when it is to be thus applied, it is in general requisite that it should be somewhat weakened by the addition of a proportion of simple ointment of hog's lard. An ointment similar to the above, and celebrated for the cure of such instances of ophthalmia, has long sold under the name of *Smellon's eye-salve*.

UNGUENTUM CALCIS HYDRARGYRI ALBÆ.

*Lond.**Ointment of the white calx of Quick-silver.*

Take of
The white calx of quicksilver, one drachm;
Ointment of hogs lard, one ounce and a half,
Mix, and make an ointment.

THIS is a very elegant mercurial ointment, and frequently used in the cure of obstinate and exotoxic affection. It is an improvement of the *Unguentum e mercurio triplicato* of the last London phar-

macopœia; the precipitated sulphur being thrown out of the composition, and the quantity of mercury increased.

UNGUENTUM ZINCI.

*Edinb.**Ointment of Zinc.*

Take of
Simple liniment, six parts;
Flowers of zinc, one part.

THIS ointment is chiefly used in affections of the eye, particularly in those cases where redness arises rather from relaxation than from active inflammation.

UNGUENTUM CANTHARIDIS.

*Lond.**Ointment of Spanish Flies.*

Take of
Spanish flies, powdered, two ounces.
Distilled water, eight ounces;
Ointment of yellow resin, eight ounces.

Boil the water with the Spanish flies to one half, and strain. To the strained liquor add the ointment of yellow resin. Evaporate this mixture in a water bath, saturated with sea-salt, to the thickness of an ointment.

UNGUENTUM INFUSICANTHARIDUM, vulgo UNGUENTUM EPISPASTICUM MITIUS.

Edinb.

Ointment of infusion of Cantharides, commonly called Mild epispastic Ointment.

Take of
Cantharides,
White resin,

Yellow

Yellow wax, each one ounce;

Hogs-lard,

Venice turpentine, each two ounces;

Boiling water, four ounces.

Infuse the cantharides in the water, in a close vessel, for a night; then strongly press out and strain the liquor, and boil it with the lard till the water be consumed; then add the resin, wax, and turpentine, and make the whole into an ointment.

THESE ointments, containing the soluble parts of the cantharides, uniformly blended with the other ingredients, are more commodious, occasion less pain, and are no less effectual in some cases, than the composition with the fly in substance. This, however, does not uniformly hold; and accordingly the Edinburgh college, with propriety, still retain an ointment containing the flies in substance.

UNGUENTUM PULVERIS CANTHARIDUM, vulgo UNGUENTUM EPISPAS- TICUM FORTIUS.

Edinb.

Ointment of powder of *Cantharides*, commonly called *stronger Epispastic Ointment*.

Take of

Resinous ointment, seven parts;

Powdered cantharides, one part.

THIS ointment is employed in the dressings for blisters, intended to be made *perpetual* as they are called, or to be kept running for a considerable time, which in many chronic, and some acute cases, is of great service. Particular care should be taken, that the cantharides employed in these composi-

tions be reduced to a very fine powder, and that the mixture be made as equal and uniform as possible.

UNGUENTUM CERÆ.

Lond.

Wax Ointment.

Take of

White wax, four ounces;

Spermaceti, three ounces;

Olive oil, one pint.

Stir them, after being melted with a slow fire, constantly and briskly, until cold.

THIS ointment had formerly the title of *Unguentum album* in the London pharmacopœia. It differs very little from the *Unguentum simplex* of the Edinburgh pharmacopœia, and in nothing from the *Unguentum spermatis cœi* of the London pharmacopœia, excepting that in this ointment the proportion of spermaceti is somewhat less. It is an useful cooling ointment for excoriations and other frettings of the skin.

UNGUENTUM CERUSSE ACETATÆ.

Lond.

Ointment of acetated Cerusse.

Take of

Acetated cerusse, two drachms;

White wax, two ounces;

Olive-oil, half a pint.

Rub the acetated cerusse, previously powdered, with some part of the olive oil; then add it to the wax, melted with the remaining oil. Stir the mixture until it be cold.

UNGUENTUM CERUSSÆ
ACETATÆ, vulgo UN-
GUENTUM SATURNI-
NUM.

Edinb.

Ointment of acetated cerusse, commonly called Saturnine Ointment.

Take of

Simple ointment, twenty parts ;
Acetated cerusse, one part.

Born these ointments are useful coolers and desiccatives ; much superior both in elegance and efficacy to the *nutritum* or *tripburmacum*, at one time very much celebrated.

UNGUENTUM CERUSSÆ,
vulgo UNGUENTUM AL-
BUM.

Edin.

Ointment of Cerusse, commonly called White Ointment.

Take of

Simple ointment, five parts ;
Cerusse, one part.

THIS is an useful, cooling, emollient ointment, of great service in excoriations and other similar frettings of the skin. The cerusse has been objected to by some, on a suspicion that it might produce some ill effects, when applied, as these unguents frequently are, to the tender bodies of children : The small quantity of cerusse, however, which this ointment contains, cannot produce any ill effects without the ointment be applied in too large quantities.

UNGUENTUM ELEMI
COMPOSITUM.

Lond.

Compound Ointment of Elemi.

Take of

Elemi, one pound ;
Turpentine, ten ounces ;
Mutton suet, prepared, two pounds ;
Olive-oil, two ounces.

Melt the elemi with the suet ; and having removed it from the fire, mix it immediately with the turpentine and oil ; after which strain the mixture.

THIS ointment, formerly known by the name of *Linimentum Arcei*, has long been used for digesting, cleansing, and incarnating ; and for these purposes is preferred by some surgeons to all the other compositions of this kind.

These, however, are much more processes of nature than of art ; and it is much to be doubted, whether it has in reality any influence.

UNGUENTUM HELLEBORI
ALBI.

Lond.

Ointment of white Hellebore.

Take of

The root of white hellebore, powdered, one ounce ;

Ointment of hog's lard, four ounces ;

Essence of lemons, half a scruple.

Mix them, and make an ointment.

WHITE hellebore, externally applied, has long been celebrated in the cure of cutaneous affections ; and this is perhaps one of the best formulæ under which it can be applied, the hog's lard ointment serving

serving as an excellent basis for it, while the essence of lemons communicates to it a very agreeable smell.

UNGUENTUM HYDRARGYRI FORTIUS.

Lond.

Stronger Ointment of Quicksilver.

Take of

Purified quicksilver, two pounds;
Hog's lard, prepared, twenty-three ounces;
Mutton-suet, prepared, one ounce.

First rub the quicksilver with the suet and a little of the hog's lard, until the globules disappear; then add what remains of the lard, and make an ointment.

UNGUENTUM HYDRARGYRI MITIUS.

Lond.

Weaker Ointment of Quicksilver.

Take of

The stronger ointment of quicksilver, one part;
Hog's lard, prepared, two parts.
Mix them.

UNGUENTUM HYDRARGYRI, vulgo UNGUENTUM CÆRULEUM.

Edinb.

Ointment of Quicksilver, commonly called Blue Ointment.

Take of

Quicksilver,
Mutton suet, each one part;
Hog's lard, three parts.
Rub them carefully in a mortar till the globules entirely disappear.

This ointment may also be made with double or treble the quantity of quicksilver.

THESE ointments are principally employed, not with a view to their topical action, but with the intention of introducing mercury in an active state into the circulating system; which may be effected by gentle friction on the sound skin of any part, particularly on the inside of the thighs or legs. For this purpose, these simple ointments are much better suited than the more compounded ones with turpentine and the like, formerly employed. For by any acrid substance topical inflammation is apt to be excited, preventing farther friction, and giving much uneasiness. To avoid this, it is necessary, even with the mildest and weakest ointment, somewhat to change the place at which the friction is performed. It is requisite that the ointment should be prepared with very great care: for upon the degree of tincture which has been employed, the activity of the mercury very much depends. The addition of the mutton suet, now adopted by both colleges, is an advantage to the ointment, as it prevents it from running into the state of oil, which the hog's lard alone, in warm weather, or in a warm chamber is sometimes apt to do, and which is followed by a separation of parts. We are even inclined to think, that the proportion of suet directed by the London college is too small for this purpose, and indeed seems to be principally intended for the more effectual triture of the mercury: But it is much more to be regretted, that in a medicine of such activity, the two colleges should not have directed the same proportion of mercury to the fatty matter. For although both have directed ointments of different strength, neither the weakest nor

the strongest agree in the proportion of mercury which they contain.

UNGUENTUM HYDRARGYRI NITRATI.

Lond.

Ointment of nitrated Quickilver.

UNGUENTUM HYDRARGYRI NITRATI FORMIUS, vulgo UNGUENTUM CITRINUM.

Edinb.

Strong Ointment of nitrated Quickilver, commonly called Yellow Ointment.

Take of

Quickilver, one ounce ;
Nitrous acid, two ounces ;
Hog's lard, one pound.

Dissolve the quicksilver in the nitrous acid, by digestion in a sand-heat ; and, while the solution is very hot, mix with it the lard, previously melted by itself, and just beginning to grow stiff. Stir them briskly together in a marble mortar, so as to form the whole into an ointment.

ALTHOUGH the activity of the nitrated quicksilver be very considerably moderated by the animal fat with which it is afterwards united, yet it still affords us a very active ointment : and as such it is frequently employed with success in cutaneous and other topical affections. In this condition, however, the mercury does not so readily enter the system, as in the preceding form. Hence it may even be employed in some cases with more freedom ; but in other instances it is apt to excoriate and inflame the parts. On this ac-

count a reduction of its strength is sometimes requisite.

UNGUENTUM HYDRARGYRI NITRATI MITIUS.

Edinb.

Milder ointment of nitrated quickilver.

It is made in the same manner as the former, but with double the quantity of the hog's lard.

UNGUENTUM PICIS.

Lond.

Tar Ointment.

Take of

Tar,

Mutton-suet, prepared, of each half a pound.

Melt them together, and strain.

UNGUENTUM PICIS.

Edinb.

Ointment of Tar.

Take of

Tar, five parts ;

Yellow wax, two parts.

THESE compositions cannot be considered as differing essentially from each other, their activity entirely depending on the tar. It has been successfully employed against some cutaneous affections, particularly those of domestic animals. At one time, as well as the black basilicon of the old pharmacopœias, it was much employed as a dressing even for recent wounds.

UN-

UNGUENTUM RESINÆ FLAVÆ.

Lond.

Ointment of Yellow Resin.

Take of

Yellow resin,

Yellow wax, of each one pound;

Olive oil, one pint.

Melt the resin and wax with a slow fire; then add the oil, and strain the mixture while hot.

UNGUENTUM RESINOSUM, vulgo UNGUENTUM BASILICUM.

Edinb.

*Resinous ointment, commonly called
Basilicon Ointment.*

Take of

Hog's lard, eight parts;

White resin, five parts;

Yellow wax, two parts.

THESE are commonly employed in dressings, for digesting, cleansing, and incarnating wounds and ulcers. They differ very little, if at all, in their effects, from the *Linimentum Arcei*, or *unguentum elmi*, as it is now more properly styled; but it is probable that no great effect is to be attributed to either. For there can be no doubt that the suppurative and adhesive inflammations are processes of nature, which will occur without the aid of any ointment.

UNGUENTUM SAMBUCI.

Lond.

Elder Ointment.

Take of

Elder flowers, four pounds;

Mutton suet, prepared, three pounds;

Olive oil, one pint.

Boil the flowers in the suet and oil, till they be almost crisp; then strain with expression.

THIS ointment does not seem superior to some others. It can scarcely be supposed to receive any considerable virtue from the ingredient from which it takes its name; and accordingly, it is with propriety rejected from the Edinburgh pharmacopœia.

UNGUENTUM SPERMATIS CETI.

Lond.

Ointment of Spermæti.

Take of

Spermæti, six drachms;

White wax, two drachms;

Olive oil, three ounces.

Melt them together over a slow fire, stirring them constantly and briskly until they be cold.

THIS had formerly the name of *Linimentum album*, and it is, perhaps only in confidence that it can be considered as differing from the *Unguentum simplex*, already mentioned, or the *Ceratum simplex*, afterwards to be noticed.

UNGUENTUM SULPHURIS.

Lond.

Sulphur Ointment.

Take of

Ointment of hog's lard, half a pound;

Flowers of sulphur, four ounces. Mix them, and make an ointment.

UN-

UNGUENTUM SULPHURIS, vulgo UNGUENTUM ANTIPSORICUM.

Edinb.

Ointment of Sulphur, commonly called antipsoric Ointment.

Take of

Hog's lard, four parts;

Sulphur, beat into a very fine powder, one part.

To each pound of this ointment add,

Essence of lemons, or

Oil of lavender, half a drachm.

the itch may thus be cured by one pot of ointment, it will be proper to renew the application, and to touch the parts most affected, for a few nights longer, till a second quantity also be exhausted; and in the worst cases, to subjoin the internal use of sulphur, not with a view to purify the blood, but to diffuse the steams more certainly through the skin; there being reason to believe, that the an-macula may sometimes lie too deep to be thoroughly destroyed by external applications.

SULPHUR is a certain remedy for the itch, and safer than mercury. Sir John Pringle observes, that unless a mercurial unktion was to touch every part of the skin, there can be no certainty of success; whereas, from a sulphureous one, a cure may be obtained by only partial unktion, the an-macula, which are supposed to occasion this disorder, being, like other insects, killed by the sulphureous steams which exhale by the heat of the body. As to the internal use of mercury, which some have accounted a specific, there are several instances of men undergoing a complete salivation for the cure of the lues venerea, without being freed from the itch: but there are also a multitude of instances of men undergoing a long course of sulphur without effect, and who were afterwards readily cured by mercury.

The quantity of ointment, directed in the London pharmacopœia, serves for four unktions: the patient is to be rubbed every night: but to prevent any disorder that might arise from stopping too many pores at once, a fourth part of the body is to be rubbed at one time. Though

UNGUENTUM TUTIÆ.

Lon.

Tutty Ointment.

Take of

Prepared tutty, one drachm;

Ointment of spermaceti, what is sufficient.

Mix them so as to make a soft ointment.

UNGUENTUM TUTIÆ.

Edinb.

Ointment of Tutty.

Take of

Simple liniment, five parts;

Prepared tutty, one part.

THESE ointments have long been celebrated, and are still much employed against affections of the eyes.

Tutty is sometimes very impure, and acts only by means of the zinc it contains; and hence the ointment of tutty may be considered as inferior both to the *Ceratium lapidis calaminaris* and to the *Unguentum zinci*, which have also a place in our pharmacopœia.

LINI-

LINIMENTUM SIMPLEX.

*Edinb.**Simple Liniment.*

Take of

Olive oil, four parts ;

White wax, one part.

THIS consists of the same articles which form the *Unguentum simplex* of the Edinburgh pharmacopœia, but merely in a different proportion, so as to give a thinner confidence ; and where a thin confidence is requisite, this may be considered as a very elegant and useful application.

LINIMENTUM AMMONIÆ.

*Lond.**Liniment of Ammonia.*

Take of

Water of ammonia, half an ounce ;

Olive-oil, one ounce and an half.

Shake them together in a phial, till they are mixed.

THIS has long been known in the shops under the title of *Linimentum volatile*, but is now more properly denominated from the principal active article, which enters its composition. It has been much employed in practice, particularly on the recommendation of Sir John Pringle. He observes, that in the inflammatory quinsy, or strangulation of the fauces, a piece of flannel, moistened with this mixture, applied to the throat, and renewed every four or five hours, is one of the most efficacious remedies. By means of this warm stimulating application, the neck, and sometimes the whole body, is put into a sweat, which, after bleeding, either carries off,

or lessens the inflammation. Where the skin cannot bear the acrimony of this mixture, a larger proportion of oil may be used.

LINIMENTUM AMMONIÆ
FORTIUS.*Lond.**Stronger Liniment of Ammonia.*

Take of

Water of pure ammonia, one ounce ;

Olive oil, two ounces.

Shake them together in a phial.

OLEUM AMMONIATUM,
vulgo LINIMENTUM
VOLATILE.*Edin.*

*Ammoniated Oil, commonly called
Volatile Liniment.*

Take of

Olive-oil, two ounces ;

Water of caustic ammonia, two drachms.

Mix them together.

THESE two articles differ from each other only in strength. When too strong, or too liberally applied, they sometimes occasion inflammations, and even blisters ; but they are much more powerful than the preceding one made with the mild volatile alkali.

LINIMENTUM AQUÆ
CALCIS.*Edin.**Lime-water Liniment.*

Take of

Lintseed oil,

Lime water, of each equal parts.

Mix them.

THIS

THIS liniment is extremely useful in cases of scalds or burns, being singularly efficacious in preventing, if applied in time, the inflammation subsequent to burns or scalds; or even in removing it after it has come on.

LINIMENTUM CAMPHORÆ COMPOSITUM.

Lond.

Compound Camphor Liniment.

Take of

Camphor, two ounces;

Water of pure ammonia, six ounces;

Spirit of lavender, sixteen ounces.

Mix the water of ammonia with the spirit; and distil from a glass retort, with a slow fire, sixteen ounces. Then dissolve the camphor in the distilled liquor.

THIS formula, which has now for the first time a place in the London pharmacopœia, approaches to the volatile essence of that celebrated empyric the late Dr Ward: But the above is a more elegant and active formula than either of the receipts published by Mr Page, from Dr Ward's book of receipts; and there is no reason to doubt that it will be equally effectual in removing some local pains, such as particular kinds of headache.

LINIMENTUM OPIATUM, vulgo ANODYNUM, vulgo BALSAMUM ANODYNUM.

Edinb.

The opiate or Anodyne Liniment, commonly called Anodyne Balsam.

Take of

Opium, one ounce;

White Castile sope, four ounces;

Camphor, two ounces;

Distilled oil of rosemary, half an ounce;

Rectified spirit of wine, two pounds.

Digest the opium and sope in the spirit for three days; then to the strained liquor add the camphor and oil, diligently shaking the vessel.

THE several ingredients in this formula are exceedingly well suited for the purposes expressed in the title of this preparation; the anodyne balsam has accordingly been used with much success to allay pains in strained limbs, and such like topical affections.

LINIMENTUM SAPONACEUM, vulgo BALSAMUM SAPONACEUM.

Edinb.

Saponaceous Liniment or Balsam.

This is made in the same manner and of the same ingredients as the foregoing, only omitting the opium.

LINIMENTUM SAPONIS COMPOSITUM.

Lond.

Compound Sope-liniment.

Take of

Sope, three ounces;

Cam-

Camphor, one ounce;

Spirit of Rosemary, one pint.

Digest the sops in the spirit of rosemary until it be dissolved, and add to it the camphor.

THESE two, which do not materially differ, are intended as a simplification of the Opodeldoch of former pharmacopœias, and are employed against bruises, rheumatic pains, and other similar complaints.

UNGUENTUM ÆGYPTIACUM.

Gen.

Egyptian Ointment.

Take of

Honey, one pound;

Strong vinegar, half a pound;

Verdegriis, powdered, five ounces.

Let the ingredients be boiled together till the verdegriis be dissolved, so that the ointment may have a due degree of thickness and a purple colour.

THIS preparation had formerly a place in our pharmacopœias, under the title of *Mel Egyptianum*: and a similar preparation has now a place under the title of *Oxymel aruginis*. It is a very powerful application for cleansing and detaching foul ulcers, as well as for keeping down fungous flesh; but these purposes may in general be answered by articles less acrid and exciting less pain. Besides this, the above preparation is also liable to considerable uncertainty with respect to strength; for a large proportion of the verdegriis will in time subside to the bottom: and what is in the top of the pot will prove much less active than that in the bottom.

UNGUENTUM ANODYNUM.

Gen.

Anodyne Ointment.

Take of

Olive-oil, ten drachms;

Yellow wax, half an ounce;

Crude opium, one drachm.

Mix them according to art, so as to form an ointment.

OPIMUM thus externally applied, will in some degree be productive of the same effect as when used under the form of the anodyne balsam. In that state it produces its effects more immediately; but under the present form, its effects are more permanent. Besides this, the present ointment furnishes us with an useful dressing for sores attended with severe pain; to which opium when dissolved in spirit cannot be applied. Hence the present, or some analogous formula, is well intitled to a place in our pharmacopœias.

UNGUENTUM ad CANCRUM EXULCERATUM.

Brun.

Ointment for an ulcerated Cancer.

Take of

The recently expressed juice of the ricinus, one pound.

Let it be exposed to the rays of the sun in a leaden vessel till it acquire the consistence of an oil; then to one pound of this inspissated juice, add Calcinèd lead,

White precipitate of mercury, each one pound.

Let them be properly mixed.

THIS acrid application must possess a considerable degree of corrosive power. And in some cases

cases of cancer, by the proper application of corrosives, much benefit may be done; But where the disease has made any considerable progress, these will in general have the effect rather of halting its progress than of removing it; particularly if there be a large indolent tumor below the ulcer.

UNGUENTUM DIGESTIVUM.

Reqs.
Digressive Ointment.

Take of

Venice turpentine, one pound;
The yolks of eight eggs.
Mix them together, according to art.

THIS warm stimulating application is well suited to promote the suppurative inflammation, and may be advantageously had recourse to, where it is necessary to encourage a large discharge of pus.

UNGUENTUM HÆMORRHOIDALE.

Hæmorrhoidal Ointment.

Take of

Saturine ointment, six drachms;
Oil of Hyoscyamus, obtained by boiling, two drachms;
Camphor, powdered, two scruples;
Saffron, one scruple.

Mix them into an ointment.

THE name affixed to this ointment expresses the purpose for which it is applied. From the articles of which it consists, it may be concluded, that it possesses a gently emollient and anodyne power; and may therefore afford considerable relief, where much

pain arises from external hæmorrhoidal tumours.

UNGUENTUM LAURINUM.

Succ.
Laurel Ointment.

Take of

Prepared mutton-suet, eight ounces.

After it is melted and removed from the fire, add to it,

Oil of bays, one pound;

Ethereal oil of turpentine, one ounce;

Rectified oil of amber, half an ounce.

Let them be mixed and rubbed together till they form an ointment.

THIS is an improved mode of forming an ointment which had formerly a place in our pharmacopæias under the title of *Unguentum nervinum*. It is a warm stimulating nervine application, which may in some degree restore sense and motion to paralytic limbs; and while it at least serves to lead to the careful use of friction, this may somewhat increase the benefit which would result from it.

UNGUENTUM c STYRACE.

Succ.
Ointment of Storax.

Take of

Olive-oil, a pound and a half;

White resin,

Gum elemi,

Yellow wax, each seven ounces.

After they are melted together and strained, add

Liquid storax, seven ounces.

Mix them together, and agitate the mixture till it concretes into a uniform ointment.

AN ointment supposed to derive its activity from the florax, although it have no place in our pharmacopœias, is received into most of the foreign ones. It has been much celebrated not only as a strengthening application to weakly children, but even for the removal of affections of the bones, as in cases of rachitis and the like. It is however, very doubtful how far these properties depend on the florax. If it have really any good effect, it is probable that this is more the consequence of the friction merely, than of any of the articles which enter the composition of the ointment. But there is reason to believe that the virtues attributed to this ointment are more imaginary than real.

UNGUENTUM e CEPA.

Succ.

Onion Ointment.

Take of

Yellow wax,

Resin, each half a pound.

To these melted, add

Onions roasted under the ashes,
Honey, each two pounds and a half;

Black soap, half a pound.

Let them be gently boiled together till all the moisture be consumed, then strain the liquor, expressing it from the materials, and afterwards agitate it with a wooden pestle that it may unite into one uniform mass.

THIS ointment is applied with the intention of promoting suppuration. The onion has long been supposed, especially in its roasted state, to have a remarkable influence in this way: but there is reason to think, that the powers attributed to it have been greatly overrated; and there is even ground to presume that these effects totally depend on heat and moisture. Hence no application is perhaps better suited for promoting suppuration than a poultice of bread and milk, applied as hot as can be borne with ease, and frequently repeated.

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C H A P. XXXIV.

C E R A T A.

C E R A T E S.

CERATES are substances intended for external application, formed of nearly the same materials which constitute ointments and plasters; from which they differ principally in being of an intermediate consistence between the two. Accordingly, they are seldom the subject of a separate chapter by themselves, but are classed either with the one or the other. In the Edinburgh pharmacopœia they are classed among the ointments: But as the London college have referred them to a separate head, we shall here also consider them by themselves.

THIS differs from the simple ointment in containing a greater proportion of wax to the oil, and in the addition of the spermaceti; by which it obtains only a more firm consistence, without any essential change of properties.

CERATUM CANTHARI-

DIS.

*Lond.**Cerate of Cantharides.*

Take of

Cerate of spermaceti, softened with heat, six drachms;

Spanish flies, finely powdered, one drachm.

Mix them.

CERATUM SIMPLEX.

*Edinb.**Simple Cerate.*

Take of

Olive-oil, six parts;

White wax, three parts;

Spermaceti one part.,

Unite them according to art.

UNDER this form cantharides may be made to act to any extent that is requisite. It may supply the place either of the blistering plaster or ointment: and there are cases in which it is preferable to either. It is particularly more convenient than the *Emplastrum cantharidum*, where the

the skin to which the blister is to be applied is previously much affected, as in cases of small pox; and in supporting a drain under the form of issue, it is less apt to spread than the softer ointment.

CERATUM LAPIDIS CALAMINARIS.

Lond.

Calamine-cerate.

Take of

Calamine, prepared,

Yellow wax, of each half a pound;

Olive-oil, one pint.

Melt the wax with the oil; and, as soon as the mixture begins to thicken, mix with it the calamine, and stir the cerate until it be cold.

CERATUM LAPIDIS CALAMINARIS.

Edinb.

Cerate of Calamine.

Take of

Simple cerate, five parts;

Calamine prepared, one part.

THESE compositions are formed on the Cerate which Turner strongly recommends in cutaneous ulcerations and excoriations, and which has been usually distinguished by his name. They appear from experience to be excellent epulotics, and as such are frequently used in practice.

CERATUM LITHARGYRI ACETATICOMPOSITUM.

Lond.

Compound Cerate of acetated Litharge.

Take of

Water of acetated Litharge, two ounces and a half;

Yellow wax, four ounces;

Olive-oil, nine ounces;

Camphor, half a drachm.

Rub the camphor with a little of the oil. Melt the wax with the remaining oil, and as soon as the mixture begins to thicken, pour in by degrees the water of acetated litharge, and stir constantly until it be cold; then mix in the camphor before rubbed with oil.

THIS application has been rendered famous by the recommendations of Mr Goulard. It is unquestionably in many cases very useful; it cannot, however, be considered as varying essentially from the saturnine ointment, formerly mentioned. It is employed with nearly the same intentions, and differs from it chiefly in consistence.

CERATUM RESINÆ FLAVÆ.

VÆ.

Lond.

Cerate of yellow Resin.

Take of

Ointment of yellow resin, half a pound;

Yellow wax, one ounce.

Melt them together, and make a cerate.

THIS had formerly the name of *Unguentum citrinum*. It is no otherw^{ise} different from the yellow balsicum, or *Unguentum resinæ flavæ*, than

than being of a stiffer consistence, *is ceti*, or *Linimentum album*, as which renders it more common; it was formerly called, excepting in consistence.

CERATUM SAPONIS.

Lond.

Sope Cerate.

Take of

Sope, eight ounces;
Yellow wax, ten ounces;
Litharge, powdered, one pound;
Olive oil, one pint;
Vinegar, one gallon.
Boil the vinegar with the litharge, over a slow fire, constantly stirring, until the mixture unites and thickens; then mix in the other articles, and make a cerate.

NOTWITHSTANDING the name, this cerate may rather be considered as another saturnine application; its activity depending very little on the sope: It can hardly be thought to differ in its properties from the cerate of acetated litharge just mentioned. For neither the small proportion of camphor which enters the composition of the one, nor the sope which gives name to the other, can be considered as having much influence.

CERATUM SPERMATIS CETI.

Lond.

Cerate of Spermaceti.

Take of

Spermaceti, half an ounce;
White wax, two ounces;
Olive oil, four ounces.
Melt them together, and stir until the cerate be cold.

THIS had formerly the name of *Ceratum album*, and it differs in nothing from the *Unguentum sperma-*

CERATUM LABIALE.

Ross.

Lip-Salve.

Take of

Olive-oil, eighteen ounces;
White wax, one pound;
Spermaceti, an ounce and a half;
Oil of rhodium, half a drachm.
Form a cerate, tinging it with alkanet, so as to give a red colour.

THE name affixed to this cerate points out the use for which it is intended. It is chiefly employed against those chops and excoriations of the lips, which are often the consequence of cold weather; and it is very well suited for removing affections of that kind. Excepting in the colour and smell which it derives from the alkanet and rhodium, it differs in nothing from the cerate of spermaceti, and cannot be considered as more effectually answering the intention in view.

CEREI MEDICATI.

Succ.

Bougies.

Take of

Yellow wax, melted, one pound;
Spermaceti, three drachms;
Vinegar of litharge, two drachms.

Mix them, and upon removal from the fire immerse into the mixture slips of linen, of which bougies are to be formed according to the rules of art.

These may also be made with double, triple, or quadruple, the quantity of the vinegar of litharge.

It

It is perhaps rather surprising that no formula for the preparation of bougies has a place in our pharmacopœias : For there can be no doubt, that although the preparation of them has hitherto been principally trusted to empirics ; yet in the hand of the skilful practitioner they are of great service in combating obstinate affections. Although it has been pretended by some that their influence is to

be ascribed to certain impregnations ; yet it is on better grounds contended, that they act entirely on mechanical principles. The great object is therefore to obtain the union of a proper degree of firmness and flexibility. These qualities the above composition possesses ; and it does not probably derive any material benefit from being prepared with an additional portion of the *Acetum lithargyri*.

C H A P. XXXV.

CATAPLASMATA.

CATAPLASMS.

BY cataplasms are in general understood those external applications, which are brought to a due consistence or form for being properly applied, not by means of oily or fatty matters, but by water or watery fluids. Of these not a few are had recourse to in actual practice; but they are seldom prepared in the shops of the apothecaries; and in some of the best modern pharmacopœias, no formulæ of this kind are introduced. The London college, however, although they have abridged the number of cataplasms, still retain a few; and it is not without some advantage that there are fixed forms for the preparation of them.

CATAPLASMA CUMINI.

Lond.

Cataplasma of Cummin.

Take of

Cummin seed, one pound;
Bay-berries,

Dry leaves of water germander,
or scordium,
Virginian snake-root, of each
three ounces;

Cloves, one ounce.

Rub them altogether; and, with
the addition of three times the
weight of honey, make a cata-
plasm.

THIS is adopted into the present edition of the London pharmacopœia with very little alteration from the last. It was then intended as a reformation of the *Theriaca Londinensis*, which for some time past has been scarcely otherwise used than as a warm cataplasma. In place of the numerous articles which formerly entered that composition, only such of its ingredients are retained as contribute most to this intention: But even the article from which it now derives its name, as well as several others which still enter, probably contribute little

little to any medical properties it may possess.

CATAPLASMA SINAPEOS.

Lond.

Mustard cataplasim.

Take of

Mustard seed, powdered,

Crumb of bread, of each half a pound ;

Vinegar, as much as is sufficient.

Mix and make a cataplasim.

Take of

The whites of two eggs,

Shake them with a piece of alum till they be coagulated.

CATAPLASMA ALUMINIS.

Lond.

Alum cataplasim.

CATAPLASMS of this kind are commonly known by the name of *Sinapisms*. They were formerly frequently prepared in a more complicated state, containing garlic, black sope, and other similar articles ; but the above simple form will answer every purpose which they are capable of accomplishing. They are employed only as stimulants : they often inflame the part and raise blisters, but not so perfectly as cantharides. They are frequently applied to the soles of the feet in the low state of acute diseases, for raising the pulse and

THIS preparation is taken from Riverius. It is an useful stringent cataplasim for sore, moist eyes, and excellently cools and represses thin desfluxions. Slighter inflammations of the eyes, occasioned by dust, exposure to the sun, or other similar causes, are generally removed by fomenting them with warm milk and water, and washing them with solutions of white vitriol. Where the complaint is more violent, this preparation, after the inflammation has yielded a little to bleeding, is to be spread on lint, and applied at bed-time.

A TABLE, shewing in what Proportions MERCURY OF
OPIUM enter different Formule.

P <i>PULVIS creta compositus cum opio.</i> Lond. In about forty-four grains, one grain of opium is contained.	These trochisci are not frequently ordered <i>cum duplici opio</i> , and under this form are kept in many shops.
<i>Pulvis thecacuanthæ compositus.</i> Lond. In ten grains, one grain of opium. <i>Ed.</i> In eleven grains, one grain of opium.	<i>Emplastrum ammoniacum cum hydragyro.</i> Lond. In five ounces, one ounce of mercury.
<i>Pulvis opiatu.</i> Lond. In ten grains, one grain of opium.	<i>Emplastrum lithargyri cum hydragyro.</i> Lond. In five ounces, one ounce of mercury.
<i>Pulvis scammonii cum calomelane.</i> Lond. In four grains, one grain of calomel.	<i>Emplastrum hydragyri.</i> <i>Ed.</i> In three ounces and two thirds, one ounce of mercury.
<i>Pilule opi.</i> Lond. In five grains, one grain of opium. <i>Ed.</i> In ten grains, one grain of opium.	<i>Unguentum hydragyri fortius.</i> Lond. In two drachms, one drachm of mercury.
<i>Pilule hydragyri.</i> Lond. In two grains and a half, one grain of mercury.	<i>Unguentum hydragyri-mitius.</i> Lond. In five drachms, one drachm of mercury.
<i>Pilule hydragyri.</i> <i>Ed.</i> In four grains, one grain of mercury.	<i>Unguentum hydragyri.</i> <i>Ed.</i> In five drachms, one drachm of mercury.
<i>Pilule hydragyri muriati miti.</i> <i>Ed.</i> In two grains and two thirds, one grain of calomel.	<i>Unguentum hydragyri-nitrati.</i> Lond. In one drachm, four grains of nitrated quicksilver.
<i>Confessio opiata.</i> Lond. In thirty-six grains, one grain of opium.	<i>Unguentum hydragyri-nitrati fortius.</i> <i>Ed.</i> In one drachm, four grains of quicksilver, and eight of nitrous acid.
<i>Electuarium catechu.</i> <i>Ed.</i> In about one hundred and ninety-three grains, one grain of opium.	<i>Unguentum calcis hydragyri alba.</i> Lond. In one drachm, four grains and two thirds of the calx hydragyri alba.
<i>Electuarium opistum.</i> <i>Ed.</i> In every drachm, about one grain of opium.	<i>Tinctura opi.</i> Lond. is made with opium, in the proportion of one grain to about thirteen of the menstruum. <i>Ed.</i> Is made with opium, in the proportion of one grain to twelve of the menstruum,
<i>Trochisci glycyrrhizæ cum opio.</i> <i>Ed.</i> In every drachm, about one grain of opium.	

menstruum, but by evaporation each drachm contains three grains and an half of opium.

Tinctura opii camphorata, Lond. is made with opium, in the proportion of one grain to two hundred and sixty of the menstruum.

Tinctura opii ammoniata, Ed. is made with opium, in the proportion of one grain to sixty-eight of the menstruum.

Linimentum opiatum, Ed. is made with opium, in the proportion of one grain to about thirty-one of the menstruum.

TABLE of NAMES changed in the LONDON and EDINBURGH PHARMACOPOEIAS.

Names in former Pharmacopœias.

New Names.

A.

A CETUM scilliticum.

Acetum scillæ. Lond.

Æthiops mineralia.

{ Hydrargyrus cum sulphure. Lond.
sulphuratus niger. E.

Alkali fixum fossile.

Soda. Ed.

vegetabile.

Lixiva. Ed.

volatile.

Ammonia. Ed.

Aqua aluminosa Bateana.

Aqua aluminis composita. Lond.

calcis simplex,

calcis. Lond.

carvi spirituosâ.

Spiritus carvi. Ed.

cinnamomi simplex.

Aqua cinnamomi. Lond.

spirituosâ.

Spiritus cinnamomi. Lond. Ed.

fortis.

{ Acidum nitrosum dilutum. Lond.
Ed.

hordeata.

Decoctum hordei. Lond.

juniperi composita.

{ Spiritus juniperi compositus. Lond.
Ed.

menthæ piperitidis simplex.

Aqua menthæ piperitidis. Lond.

spirituosâ.

{ Spiritus menthæ piperitidis. Lon.
Ed.

vulgaris simplex.

Aqua menthæ sativæ. Lond.

spirituosâ.

Spiritus menthæ sativæ. Lond.

nucis moschatæ.

nucis moschatæ. Lon. Ed.

piperis Jamaicensis.

Aqua pimento. Lond.

pimentæ spirituosâ.

Spiritus pimento. Ed.

pulegii simplex.

Aqua pulegii. Lond.

spirituosâ.

Spiritus pulegii. Lond.

raphani composita.

raphani compositus. Lond.

rosarum damascenarum.

Aqua rosæ. Lond.

sapphirina.

{ cupri ammoniati. Lond.
æruginis ammoniata. Ed.

seminum anetbi.

anethi. Lond.

anisi composita.

Spiritus anisi compositus. Lond.

carui.

carui. Lond.

Aqua

*Names in former Pharmacopœias.**New Names.*Aqua slyptica.
vitriolica.Aqua cupri vitriolati. Ed.
zinci vitriolati. Ed.

camphorata.

cum campho-
ra. Lond.

Argentum vivum.

Hydrargyrus. Lond. Ed.

B.

Balsamum anodynum.

saponaceum.

sulphuris Barbades.

simplex.

crassum.

traumaticum.

Butyrum antimonii.

Linimentum opiatum. Ed.

saponaceum. Ed.

Petroleum sulphuratum. Lond.

Oleum sulphuratum. Lond. Ed.

Tinctura benzoës composita. Lon.

Antimonium muriatum. Lon. Ed.

C.

Calamus aromaticus.

Calomelas.

Calx antimonii.

nitrata.

Caulicum antimoniale.

commune fortius.

lunare.

Chalybis rubigo.

Colcothar vitrioli.

Cinnabaris fasciata.

Coagulum aluminosum.

Confectio cardiaca.

Japonica.

Cortex Peruvianus.

Crocus metallorum.

Acorus. Ed.

Hydrargyrus muriatus mitis. Ed.

Antimonium calcinatum. Lond.

usum cum nitro. Ed.

Antimonium muriatum. Lon. Ed.

Calx cum kali puro. Lond.

Argentum nitratum. Lond. Ed.

Ferri rubigo. Lond.

Ferrum vitriolatum usum. Ed.

Hydrargyrus sulphuratus ruber. L.

Cataplasmata aluminis. Lond.

{ Confectio aromatica. Lond.

{ Electuarium aromaticum. Ed.

Electuarium catechu. Ed.

Cinchona. Lond.

Crocus antimonii. Ed.

D.

Decoctum album.

commune.

Decoctum cornu cervi. Lond.

chamemeli. Ed.

pro clystere.

pro cremate. Lond.

guajaci compositum. E.

hondei compositum. L.

Tens leonis.

Taxacum. Lond. Ed.

Lactilla.

Electuarium cassiæ. Ed.

Electuarium

E.

Electuarium lenitivum.
thebaicum.

Elixir aloes.

guajacinum.

volatile.

myrrhæ compositum.

paregoricum.

proprietas.

vitriolicum.

sacrum.

salutis.

stomachicum.

traumaticum.

vitrioli acidum.

dulce.

Emplastrum ad hæsivum.

antihystericum.

attrahens.

cæruleum.

cephalicum.

commune.

adhæsivum.

cum gummi.

cum mercurio.

e cymino.

roborans.

e sapone.

simplex.

stomachicum.

vesicatorium.

Emulsiō communis.

Ens veneris.

Enula campana.

Extractum catharticum.

Electuarium sennæ. Lond. Ed.

opiatum. Ed.

Tinctura aloes composita. Lond.

guajaci. Ed.

ammoniata. Ed.

sabinæ compositum. Lond.

opii camphorata. Lond.

ammoniata. Ed.

aloes cum myrrha. Ed.

vitriolata. Ed.

rhei cum aloes. Ed.

sennæ composita. Ed.

gentianæ composita. Ed.

benzoini composita. Ed.

vitrioli aromaticum. Ed.

Acidum vitrioli aromaticum. Ed.

{ Spiritus ætheris vitriolici aromaticus. Ed.

Emplastrum resinosum. Ed.

assæ iætudæ. Ed.

cærx compositum. L.

hydrargyri.

papis Burgundicæ compositum. Lond.

lithargyri. Lond. Ed.

cum resina.

Lond.

compositum

Lond.

cum hydrar-

gyro. L.

Lond.

cumini. Lond.

thuris compositum. L.

lithargyri compositum

Ed.

saponis. Lond.

cereum. Ed.

ladani compositum. L.

cantharidum. L. Ed.

Lac amygdalæ. Lond.

{ Ferrum ammoniacale. Lond.

ammoniatum. Ed.

Helenium. Ed.

{ Extractum colocynthidis compositum. Lond.

Extractum

*Names in former Pharmacopœias.**New Names.*

Extractum ligni Campechensis.
corticis Peruviani,
thebaicum.

Extractum hæmatoxyli. Lond.
cinchonæ. Lond.
Opium purificatum. Lond.

F.

Flores Benzoinæ.
martiales.
zinci.

Acidum Benzoicum. Ed.
{ Ferrum ammoniacale. Lond.
ammoniatum. Ed.
{ Calx zinci. Lond.
{ Zincum ustum. Ed.
Decoctum pro fomento. Lond.

Fotus communis.

H.

Hiera picra.
Helleborus albus.

Pulvis aloes cum canello. Lond.
Veratrum. Ed.

I.

Infusum amarum.
Japonicum.
sennæ compositum.
Julepum e camphora.
e creta.
e moscho.

{ Infusum gentianæ compositum. L.
Ed.
catechu. Ed.
sennæ tartarifatum. Lond.
Mistura camphorata. Lond.
cretacea. Lond.
moschata. Lond.

L.

Laudanum liquidum.
Lignum Campechense.
Lingua cervina.
Linimentum album.
saponaceum.
volatile.

Tinctura opii. Lond. Ed.
Hæmatoxyllum. Lond. Ed.
Scelopendrium. Ed.
Unguentum spermatis ceti. Lon.
Linimentum saponis. Lond.
{ Linimentum ammoniæ. Lond.
Oleum ammoniatum. Ed.
Plumbum ustum. Ed.
Aqua livivæ caustica. Ed.
Kali puri. Lond.
preparati. Lond.

Lithargyrus,
Lixivium causticum.
saponarium.
tastati.

M.

Mel Ægyptiacum.
Melampodium.
Mercurius.

calcinatus.

corrosivus sublimatus.

ruber.

dulcis.

emeticus flavus.

precipitatus ruber.
albus.

Minium

Oxymel æruginis. Lond.
Helleborus niger. Lond.
Hydrargyrus. Lond. Ed.

calcinatus. Lond.

muriatus. Lond.

muriatus corrosivus.

Ed.

nitratu^s ruber. Lond.

Ed.

Calomelas. Lond.

Hydrargyrus muriatus mitis. Ed.

vitriolatus flavus. L.

Ed.

nitratu^s ruber. Ed.

Calx hydrargyri alba. Lond.

Plumbum ustum rubrum. Ed.

N.

Nitrum vitriolatum.
Nux moschata.

Kali vitriolata. Lond.

Myristica. Lond. Ed.

O.

Oculi cancrorum.

Oleum animale.

tartari.

Oxymel simplex.

Lapilli cancrorum. Ed.

Oleum e cornubus rectificatum. Ed.

Aqua kali præparati. Lond.

Mel acetatum. Lond.

P.

Philonium Londinense.

Pilulæ aromaticæ.

calomelanos compositæ.

coccinæ.

cephrasticæ.

gummosæ.

mercuriales.

pacificæ.

Plummerii.

Confectio opiata. Lond.

Pulvis aloeticus cum guajaco. Lond.

Pilulæ hydrargyri muriati mitis. E.

aloes cum colocynthide. Ed.

Pulvis aloes cum ferro. Lond.

{ Pilulæ galbani compositæ. Lond.

assæ fetidæ compositæ. Ed.

hydrargyri.

opii.

{ hydrargyri muriati mitis.

Ed.

Pilulæ

*Names in former Pharmacopæias.**New Names.*

Pilulæ Rusi.

stomachicæ.

Piper Jamaicense.

Pulvis e bolo compositus.

Pilulæ aloes cum myrrha. L. Ed.
rhei compositæ.

Pimenta. Lond. Ed.

Pulvis cretæ compositus. Lond.

cum opio.

{

e cerussa compositus.

e chelis cancrorum.

Doveri.

cerussæ. Lond.

cancræ chelærum. Lond.

ipecacuanhæ compositus. L.
Ed.{ Hydrargyrus præcipitatus cinereus
Ed.

{ Pulvis asari compositus. Lon. Ed.

{ aluminis compositus. Ed.

R.

Rob sambuci.

{ Succus baccharum sambuci spissatus,
Lond. Ed.

S.

Saccharum Saturni.

Sal absinthii.

Sal alkalinus fixus fossilis purificatus.

Cerussa acetata. Lond. Ed.

{ Kali præparata. Lond.

{ Lixiva purificata. Ed.

{ Natron. Lond.

{ Soda purificata. Ed.

{ Kali præparata. Lond.

{ Lixiva purificata. Ed.

{ Ammonia præparata. Lond. Ed.

{ Magnesia vitriolata. Lond. Ed.

{ Natron vitriolatum. Lond.

{ Soda vitriolata. Ed.

{ Ferrum vitriolatum. Lond. Ed.

{ Kali acetata. Lond.

{ Lixiva acetata. Ed.

{ Natron muriatum. Lond.

{ Soda muriata. Ed.

{ Ferrum vitriolatum. Lond. Ed.

{ Kali vitriolata. Lond.

{ Lixiva vitriolata. Ed.

{ Cerussa acetata. Lond. Ed.

{ Natron tartarizatum. Lond.

{ Soda tartarizata. Ed.

{ Kali præparata. Lond.

{ Lixiva tartaræ. Ed.

vegetabilis purif.

ammoniacus volatilis.

catharticus amarus.

Glauberi.

chalybis.

diureticus.

marinus.

martis.

polychrestus.

plumbi.

Rupellensis.

Seignette.

tartari.

Sal vitrioli.	Zincum vitriolaturn. Lond. Ed.
Species aromaticæ.	Pulvis aromaticus. Lond. Ed.
Spina cervina.	Rhamnus catharticus. Ed.
Sperma ceti.	Sevum ceti. Ed.
Spiritus cornu cervi.	{ Liquor volatilis cornu cervi. Lond.
Mindereri.	{ Aqua ammoniæ ex ossibus. Ed.
nitri.	{ Aqua ammoniæ acetatæ. Lond. Ed.
dulcis.	{ Acidum nitrosum. Lond. Ed.
salis ammoniaci.	{ Spiritus ætheris nitrosi. Lond. Ed.
	{ Aqua ammoniæ. Lond. Ed.
	{ Spiritus ammoniæ. Lond. Ed.
	{ Aqua ammoniæ caustica. Ed.
	{ Acidum muriaticum pura. Lond.
salis marinus.	{ Spiritus ammoniæ aromaticus. Ed.
salinus aromaticus.	{ compositus. L.
	{ Acidum vitriolicum dilutum. Lond.
vitrioli tenuis.	{ Ed.
	{ Spiritus ætheris vitriolicus. Lond.
dulcis.	{ Ed.
volatilis aromaticus.	{ Spiritus ammoniæ compositus. L.
	{ aromaticus. Ed.
fœtidus.	{ fœtidus. Lond.
	{ Ed.
Stibium.	{ Antimonium. Ed.
Succi scorbutici.	{ Succus cochleariæ compositus. L.
	{ Ed.
Sulphur auratum antimonii.	{ Sulphur antimonii præcipitatum.
	{ Lond. Ed.
Syrupus balsamicus.	{ Syrupus toltanus. Lond. Ed.
diacodion.	{ papaveris albi. Lond. Ed.
e meconio.	{ rhamni cathartici. Ed.
e spina cervina.	{
	{
T.	{
Tabellæ cardialgicæ.	{ Trochisci cretæ. Lond.
Tartari crysalli.	{ Tartarum purificatum. Ed.
Tartarum emeticum.	{ Antimonium tartarifaturn. Lond.
	{ Ed.
regeneratum.	{ Kali acetata. Lond.
solubile.	{ Lixiva acetata. Ed.
	{ Kali tartarifaturn. Lond.
	{ Lixiva tartarifata. Ed.
vitriolaturn.	{ Kali vitriolata. Lond.
	{ Lixiva vitriolata. Ed.

*Names in former Pharmacopœias.**New Names.**Tinctura amara.*

Tinctura gentianæ composita. L.
cinnamomi composita. L.
Ed.

aromatica.

corticis Peruviani.

volatilis.

foetida.

florum martialium.

guajacina volatilis.

Japonica.

hellebori albæ.

nigri.

martis.

melampodii.

rhabbarbari spirituosa.

vinosa.

rosarum.

Tinctura sacra.

stomachica.

thebaica.

valerianæ volatilis.

*Trifolium palustre.**Trochisci bechici albi.*

cardiagici.

nigri.

cum opio.

Turpethum minerale.

U.

Unguentum album.

antisporicum,

basilicum flavum.

cæruleum.

citrinum.

{ Unguentum ceræ. Lond.

cerussæ. Ed.

sulphuris. Ed.

resinæ flavæ. Lond.

resinosum. Ed.

hydrargyri. Lon. Ed.

nitrat. L.

Ed.

Un.

*Names in former Pharmacopaeias.**New Names.*

Unguentum epispasticum fortius.	{ Unguentum cantharidis. Lond.
mitius.	pulveris cantharidum. Ed.
e mercurio precipitato.	infusi cantharidum. E.
Saturninum.	calcis hydrargyri albae. Lond.
vesicatorium.	cerusæ acetatae. Lond.
Vinum antimoniale.	Ed.
chalybeatum.	cantharidum. L. Ed.
Vitriolum album.	{ Vinum antimonii. Lond.
cæruleum.	tartarifati. Ed.
viride.	ferri. Lond.
calcinatum.	Zincum vitriolatum. Lond. Ed.
	Cuprum vitriolatum. Lond. Ed.
	Ferrum vitriolatum. Lond. Ed.
	exsiccatum. Ed.

ENGLISH

A
Acid
Acid

Aera

Agar

Agri

Air,

Alde

Alka

Alka

Alko

Aloe

Alim

Alur

Amb

Amb

Amb

Amb

Amb

Amb

Amb

Amb

Amb

Amb

Amb

Amb



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			Balfam

Balsam of Gilead

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Barilla

Bark, Peruvian

Barley

Barytes

Baths

Bay

Bellium

Beans

Bears-foot

Bees wax

Beet

Benzoin

Betony

Bezoar

Birch

Birthwort

Bismuth

Bistort

Bitter sweet

Bitumens

Boles

Borage

Borax

Bougies

Boxwood

Bramble

Brooklime

Broom

butchers

Bryony

Buckbean

Buckthorn

Bugloss

Burdock

Burgundy pitch

Burnet saxifrage

Butter bur

C.

Cabbage

tree

Cajaput

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F I N I S.

FURNACES, BEAMS,
WEIGHTS, & MEASURES.

THE IRON WORK for the furnaces described in pages 45, &c. is made, according to the directions there given, by *Ebenzer Annan*, Smith, opposite the south-west corner of the College, Edinburgh.

TROY WEIGHTS, and BEAMS & SCALES, are made and sold by *John Milne & Son*, founders in the High Street, Edinburgh.

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